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JCS44 U.S. PTO

**UTILITY
PATENT APPLICATION
TRANSMITTAL**

Our Docket No.: **T257.312-0005**

Date: **OCTOBER 21, 1999**

First Named Inventor: **VASILIOS TOUTOUNTZIS**

Express Mail No.: **EL212541485US**

JCS44 U.S. PTO
09/425271
10/21/99

APPLICATION ELEMENTS

ADDRESS TO:

**Assistant Commissioner for Patents
Box Patent Application
Washington, D.C. 20231**

1. ☒ Fee Calculation Sheet
(Submit an original and a duplicate for fee processing)
2. ☒ Specification Total Pages **[23]**
 - Descriptive title of the invention
 - Cross References to Related Applications
 - Statement Regarding Fed. Sponsored R&D
 - Reference to Microfiche Appendix
 - Background of the Invention
 - Brief Summary of the Invention
 - Brief Description of the Drawings (if filed)
 - Detailed Description
 - Claims
 - Abstract of the Disclosure
3. ☒ Drawings (35 U.S.C. 113) Total Sheets **[8]**
4. ☒ Oath or Declaration Total Pages **[14]**
 - a. ☐ Newly Executed (original or copy)
 - b. ☒ Copy from a prior application (37 C.F.R. 1.63(d) - for continuation/divisional with Box 18 completed)
 - [Mark Box 5 below]**
 - i. ☐ **DELETION OF INVENTOR(S)**
Signed statement attached deleting inventor(s) named in the prior application, see 37 C.F.R. 1.63(d)(2) and 1.33(b)
5. ☒ Incorporation by Reference (useable if Box 4b is checked). The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein

6. ☐ Microfiche Computer Program (Appendix)
7. Nucleotide and/or Amino Acid Sequence Submission
(If applicable, all necessary)
 - a. ☐ Computer Readable Copy
 - b. ☐ Paper Copy (identical to Computer Copy)
 - c. ☐ Statement verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

8. ☐ Assignment Papers (cover sheet & document(s))
9. ☐ 37 C.F.R. 3.73(b) Submission
 - ☒ Power of Attorney
10. ☐ English Translation Document (if applicable)
11. ☒ Information Disclosure Statement with
Copies of Citations as necessary
12. ☒ Preliminary Amendment Total Pages **[8]**
13. ☒ Return Receipt Postcard (Should be specifically itemized)
14. ☒ Small Entity Statement(s)
 - ☐ Statement filed in Prior Application. Status still proper and desired
15. ☐ Certified Copy of Priority document(s)
(If foreign priority is claimed)
16. ☒ File Data Sheet
17. ☐ Other

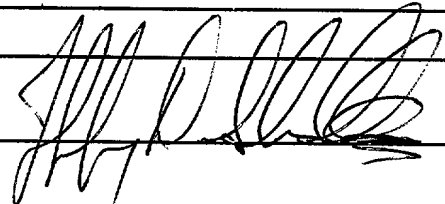
18. If a **CONTINUING APPLICATION**, check appropriate box and supply the requisite information:
☒ Continuation ☐ Division ☐ Continuation-in-part (CIP) of prior Application No. **08/859,561**

19. CORRESPONDENCE ADDRESS

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

For Reissue of Patent No. : 5,417,017 Issued : May 23, 1995 Inventor : Vasilios Toutountzis For : TERMITE CONTROL Docket No. : T257.312-3	
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**ASSENT OF ASSIGNEE AND OFFER TO SURRENDER
ORIGINAL LETTERS PATENT
AND CERTIFICATE UNDER 37 CFR § 3.73(b)**

Assistant Commissioner of Patents
Washington, D.C. 20231

Sir:

ASSENT AND OFFER TO SURRENDER

The undersigned assignee assents to the accompanying application and offers to surrender U.S. Patent No. 5,417,017.

CERTIFICATE UNDER 37 CFR § 3.73(b)

TERMIMESH AUSTRALIA PTY LTD., company is the owner of the entire right, title and interest in the patent application identified above by virtue of either:

A. ☒ An assignment from the inventor(s) of the patent application identified above. The assignment was recorded in the Patent and Trademark Office at Reel 7296, Frame 0414, or a copy of which is attached.

OR

B. ☐ A chain of title from the inventor(s), of the patent application identified above, to the current assignee as shown below:

1. From: _____ To: _____
The document was recorded in the Patent and Trademark Office at Reel _____, Frame _____, or a copy of which is attached.

2. From: _____ To: _____
The document was recorded in the Patent and Trademark
Office at Reel _____, Frame _____, or
a copy of which is attached.
3. From: _____ To: _____
The document was recorded in the Patent and Trademark
Office at Reel _____, Frame _____, or
a copy of which is attached.

The undersigned has reviewed all the documents in the chain of title of the patent application identified above and certifies, to the best of undersigned's knowledge and belief, title is in the assignee identified above.

The undersigned (whose title is supplied below) is empowered to act on behalf of the assignee.

I hereby declare that all certified statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true; and further, that these statements are made with the knowledge that willful false statements, and the like so made, are punishable by fine or imprisonment, or both, under Section 1001, Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signature: _____

Vasilios Toutountzis

Date: 16 MAY 97.

Title: _____

Managing Director

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State/Prov. of Residence ::
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Citizenship :: Australia
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Family Name ::
Name Suffix ::
Authority under 1.42 ::
Authority under 1.43 ::
Authority under 1.47 ::
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State/Prov. of Residence ::
Country of Residence ::
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Application Information

Title Line One :: TERMITE CONTROL
Title Line Two ::
Total Drawing Sheets :: 8
Formal Drawings :: Y
Application Type :: Utility Reissue
Docket Number :: T257.312-5

Representative Information

Representative Customer Number :: 00164

Continuity Information

This application is a :: Continuation
> Application One :: of 08/859,561
Filing Date :: May 20, 1997
Patent Number ::
which is a :: Reissue of
>> Application Two :: 08/040,305
Filing Date :: March 30, 1993
Patent Number :: 5,417,017
which is a :: CIP of
>> Application Three :: 07/825,299
Filing Date :: January 23, 1992
Patent Number ::
and is a :: CIP of
>> Application Four :: 07/575,908
Filing Date :: August 31, 1990
Patent Number ::

Prior Foreign Applications

Foreign Application One :: PL 7520
Filing Date :: February 25, 1993
Country :: Australia
Priority Claimed :: Y

Foreign Application Two :: PL 6128
Filing Date :: September 4, 1989
Country :: Australia
Priority Claimed :: Y

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

For Reissue of		
Patent No. : 5,417,017		
Issued : May 23, 1995		
Inventor : Vasilios Toutountzis	Group Art Unit:	
Title : TERMITE CONTROL	Examiner:	
Docket No. : T257.312-0005		

PRELIMINARY AMENDMENT

Box Non-Fee Amendment
Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to calculation of the filing fee and examination, please amend the above-identified application as follows:

IN THE DRAWINGS

Please amend Figure 6 as attached hereto.

IN THE SPECIFICATION

Please amend the paragraph at column 1, lines 4-6, as follows:

This is a Continuation of U.S. Ser. No. 08/859,561, filed May 20, 1997, which is a Reissue Application of U.S. Patent No. 5,417,017, which issued May 23, 1995 from U.S. Ser. No. 08/040,305, filed March 30, 1993, which is a Continuation-in-Part application of U.S. Ser. Nos. 07/575,908, filed Aug. 31, 1990, now abandoned, and 07/825,299, filed Jan. 23, 1992, now abandoned.

Please amend the paragraph at column 8, lines 1-14, as follows:

It is also to be understood that the beam 12 as shown in FIG. 6 can be replaced by a case in situ or precast wall or similar upwardly extending member. In such an arrangement the

barrier strip can be installed as shown in FIG. 6 or each marginal edge portion of the barrier strip 15 can be embedded in the slab and upright member respectively during casting of each or can be embedded in one and adhered or bonded to the other. In constructions where the slab and other member are cast separately, it is preferable to provide a re-entrant fold [21] 24 extending the length of the barrier strip 15 to provide the ability for limited freedom of movement between the structural members without fracture of the barrier strip.

Please amend the paragraph at column 5, lines 45-59, as follows:

Referring now to FIGs. 1 and 2a-2c of the drawings, the termite barrier is in the form of a woven mesh 10 made of corrosion resistant stainless steel wires or filaments such as 304 grade stainless steel. The termite barrier may also include a flexible moisture impervious plastic sheet 121 formed to the woven mesh 10. Preferably, both sides of the woven mesh 10 are covered by a plastic sheet 121. The woven filaments form a series of pores or openings 15 in the mesh which are of a generally rectangular shape with the distance between the two more closely spaced sides 16 of the rectangle and the diagonal thereof is less than the maximum cross sectional dimensions of the head of the species of termite in respect of which the mesh is to form a barrier (FIG.2c). For instance, the soldier termite of species *Mastotermes darwiniensis*, of northern Australia, has a maximum head width of 3.25mm. To form a termite barrier for *Mastotermes darwiniensis*, the distance between the two more closely spaced sides 16 of the rectangle and the diagonal thereof should be 3.25mm or less.

IN THE CLAIMS

Please cancel original claims 9-20 and new claims 21-24, 26-28, 30, 31, and 33-61. Please amend claims 1, 2, 3, 6, 25, 29 and 32 and please add new claim 62 such that original claims 1-8 are changed and new claims 21-62 are as follows:

1. (Amended) A termite barrier which is substantially resistant to termite chewing and corrosion, the termite barrier comprising[;] a mesh sheet formed of a material [resistant to breakdown in the

environment of use and] substantially resistant to termite secretions, said material having a hardness of not less than about Shore D70 for resistance to termite chewing, the mesh sheet having pores [wherein each pore has a linear dimension in all directions less than the maximum linear dimension of the cross section of the head of the species of termite to be controlled], the mesh sheet being positioned in relation to a structure and ground underneath the structure to provide a termite barrier for the structure.

2. (Amended) The termite barrier as claimed in claim 1, wherein the pores of the mesh sheet have a linear dimension in at least one direction[, less than the minimum lineal dimension of the cross section of the head of the species of termite to be controlled] of not more than 0.85 mm.

3. (Amended) The termite barrier as claimed in claim 1, wherein the pores of the mesh sheet are polygonal with the maximum diagonal dimension less than [the maximum linear dimension of the cross section of the head of the species of termite to be controlled] 3.25 mm.

6. (Amended) The termite barrier as claimed in claim 4, wherein the rectangular pores are dimensioned 0.40 mm by 0.70 [min] mm.

9. Canceled.

10. Canceled.

11. Canceled.

12. Canceled.

13. Canceled.

14. Canceled.

15. Canceled.

16. Canceled.

17. Canceled.

18. Canceled.

19. Canceled.

20. Canceled.

21. Canceled.

22. Canceled.

23. Canceled.

24. Canceled.

25. A method of termite barrier installation for a building structure, comprising the act of:

during erection of the building structure on a slab of concrete at or near ground level,
positioning a sheet coextensively with at least a portion of the slab, the sheet
being formed of a material substantially resistant to termite secretions, the
material having a hardness of not less than about Shore D70 for resistance to
termite chewing, the sheet having open pores permitting fluid flow
therethrough, to thereby exclude entry of termites into the building structure
through said portion of the slab.

26. Canceled.

27. Canceled.

28. Canceled.

29. The method of termite barrier installation as claimed in claim 25 comprising casting
the slab in-situ, and wherein the positioning of the sheet comprises positioning the sheet beneath the
slab prior to pouring of concrete over the sheet to cast the slab.

30. Canceled.

31. Canceled.

32. The method of termite barrier installation as claimed in claim 25 wherein the positioning of the sheet comprises embedding the sheet in the slab.

33. Canceled.

34. Canceled.

35. Canceled.

36. Canceled.

37. Canceled.

38. Canceled.

39. Canceled.

40. Canceled.

41. Canceled.

42. Canceled.

43. Canceled.

44. Canceled.

45. Canceled.

46. Canceled.

47. Canceled.

48. Canceled.

49. Canceled.

50. Canceled.

51. Canceled.

52. Canceled.

53. Canceled.

54. Canceled.

55. Canceled.

56. Canceled.

57. Canceled.

58. Canceled.

59. Canceled.

60. Canceled.

61. Canceled.

62. In combination with a building structure erected on a ground level or near ground level concrete slab, a termite barrier comprising:

an adjacent structure, built adjacent to but non-integrally with the building structure,

the adjacent structure built of a termite resistant material; and

a strip of termite barrier material formed of a flexible sheet made of a material

substantially resistant to termite secretions and having a hardness of not less

than about Shore D70 for resistance to termite chewing, said strip of termite

barrier material having respective marginal edge portions along opposite

longitudinal edges of the strip integrally secured to the slab and the adjacent

structure to establish integrity of the connection between the slab and the

adjacent structure against the passage of termites.

REMARKS

It is respectfully requested that the above amendments be made prior to calculating the filing fee. The Preliminary Amendment places the specification and claims 1-8, 25, 29, 32 and 62 into substantially the form they were in in the parent Reissue Application No. 08/859,561 prior to the Amendment After Final filed October 19, 1999. Enclosed please find a Letter to the Official Draftsman as well as copies of the following documents as originally filed with the parent

application: Assent of Assignee and Offer to Surrender Original Letters Patent and Certificate, Order for Title Report, and the Request for the Transfer of Original Drawings.

Applicant respectfully thanks the Examiner for the telephone interview conducted between the undersigned and the Examiner on or about October 5 and 7, 1999 in the parent application. The teaching of Sandell U.S. Patent No. 2,017,106 was discussed, and no agreement was reached.

In particular, the Examiner's rejection of claims in the parent application relies on the line from Sandell that, "it is evident that the size of the wire of which the fabric 13 is constructed and the mesh of this fabric may vary according to the purpose for which the waterproof sheet material may be utilized." Sandell, Col. 2, lines 47-50. All the pending claims of the present application include "termite barrier" limitations. Sandell does not disclose or suggest that "the purpose for which the waterproof sheet material may be utilized" is a termite barrier. Rather, Sandell discloses the problems with sheet waterproofing material, to which the Sandell structure is directed, as follows:

Flashing that is often referred to as interlocking wall flashing requires an excessive amount of space because it necessarily is embedded in the binding material between courses of masonry and an extremely wide joint is formed. It is often difficult to properly embed interlocking flashing in binding material because of the formation of the flasing and the binding material often fails to enter recesses provided therefor in the flashing.

Sandell, page 1, left col., lines 21-30. To address this problem, the purpose of the Sandell mesh size is discussed such as at page 2, left col., lines 16-24:

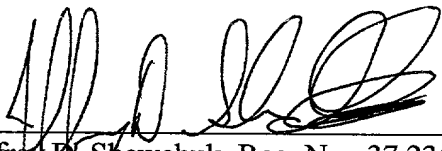
When used at such locations the material 10 is embedded in mortar 16 which is utilized to bind the adjacent courses of masonry together and this binding material enters the depressions 15 provided in the upper and lower surfaces of the material 10 between the ridges 14 thereof and acts to bond the flashing material and masonry structure together and prevent a relative movement therebetween in a horizontal plane.

Thus, a worker skilled in the art utilizing Sandell would realize that the wire size and mesh size must be large enough to form depressions and ridges which are transmitted **through the waterproofing fabric 11**, to thereby positively engage the masonry binding material. A worker skilled in the art would know that the termite barrier claimed has a wire size and mesh size which prevents the passage of termites, which is too small to realize the benefit of "positive engagement through waterproofing fabric" taught by Sandell. That is, a worker skilled in the art following the teaching of Sandell would have no motivation or incentive to make the mesh size small enough to prevent the passage of termites, because such a small size would ruin the benefit taught by Sandell. Claims 2, 3, 5 and 6 specifically require a size which a worker skilled in the art would immediately reject as too small to act as "positive engagement through waterproofing fabric" as taught by Sandell.

The application containing pending claims 1-8, 25, 29, 32 and 62 is in condition for allowance. Consideration and notice to that effect is respectfully requested. The Examiner is invited to contact the undersigned attorney at the number listed below if such a call would in any way facilitate examination of the application.

Respectfully submitted,

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JDS:MGH

APPENDIX A

AMENDED CLAIMS 25, 29 AND 32 IN AMENDMENT FORM

For Reissue of

Patent No. : 5,417,017
Issued : May 23, 1995
Inventor : Vasilios Toutountzis
Title : TERMITE CONTROL
Our File : T257.312-0005

25. (Amended) A method of termite barrier installation for a building structure, comprising the [step] act of:

during erection of the building structure on a slab of concrete at or near ground level, positioning a sheet [in association] coextensively with at least a portion of the slab, the sheet being formed of a material [resistant to breakdown in the environment of use and] substantially resistant to termite secretions, the material having a hardness of not less than about Shore D70 for resistance to termite chewing, the sheet having open pores permitting fluid flow therethrough [wherein each pore has a linear dimension in all directions less than the maximum linear dimension of the cross section of the head of the species of termite to be controlled], to thereby exclude entry of termites into the building structure through said portion of the slab.

29. (Amended) The method of termite barrier installation as claimed in claim [26] 25 comprising casting the slab in-situ, and wherein the positioning of the sheet comprises positioning the sheet beneath the slab prior to pouring of concrete over the sheet to cast the slab.

32. (Amended) The method of termite barrier installation as claimed in claim 25 wherein the positioning of the sheet [is embedded] comprises embedding the sheet in the slab.

REISSUE PATENT APPLICATION OF
VASILIOS TOUTOUNTZIS
ENTITLED
TERMITE CONTROL

Docket No. T257.312-3
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ABSTRACT

A barrier to termites particularly suitable for protecting buildings comprising a mesh made of a material that is resistant to breakdown in the environment of use and is resistant to secretions deposited by termites, such as stainless steel, and is also sufficiently hard to not be attacked by termites, such as having a hardness not less than about Shore D70. The pores of the mesh being dimensioned so the maximum linear dimension in any direction of the pores is less than the maximum linear dimension of the cross-section of the head of the species of termite to be controlled.

TERMITE CONTROL

This is a Continuation-In-Part application of U.S. Ser. Nos. 07/575,908, filed Aug. 31, 1990, now abandoned, and 07/825,299, filed Jan. 23, 1992, now abandoned.

BACKGROUND OF THE INVENTION

This invention relates to the control of termites in relation to buildings and other structures and in particular to achieving such control without the use of harmful chemicals.

The most popular procedure for providing a barrier to the access of termites to buildings or other structures supported in or on the ground is to saturate the ground beneath or around the structure with appropriate chemicals, to kill any existing termites, and to provide a residue of the chemical within the ground which will remain effective for many year against the passage of termites therethrough to the structure. It has been proposed in published patent specifications to provide a mat of fibrous or absorbent material to be laid below the foundations of a building with the fibre or porous material saturated with, or containing an appropriate chemical which will kill termites that attempt to pass therethrough. Refer to published Australian Patent Application Nos. 85176/82, 11 412/83, 16980/83 and 21934/84.

These methods of termite control have the major disadvantage as the chemicals are usually of a composition that is considered highly dangerous to humans and thus constitute a hazard to the people applying the chemicals and to other people in the vicinity. Under some atmospheric conditions, the chemical can be carded considerable distances from the area where they are being applied. Thus people unaware of the presence of the chemicals, and thus not alerted to take protective action, may also be exposed to the potential danger of the chemicals used to control termites. The danger continues to exist after the initial application of the chemical so long as the chemical remains effective against the termites.

Also, as it is necessary to establish a high concentration of the chemical in the ground beneath where the building is to be built in order to obtain the required period of protection against termite entry to the building, leaching of the chemical will occur over time. This leaching will naturally reduce the effectiveness of the chemical as a barrier to the termites. As the chemical in many instances is initially placed beneath a concrete slab upon which the building is erected, it is very difficult to apply further chemical to replace that removed by the leaching and so maintain an effective barrier.

Even more important, chemicals leached from the ground beneath the building is carried by the leaching water into other areas where it may be hazardous to humans, animals or crops. Also the leached chemical can enter dyers, streams or lakes or underground water catchments which can potentially spread the chemicals over a very wide area thus increasing the potential exposure to the chemical. It will also be appreciated that the chemicals leached from building sites over a relatively wide area can collect in a single river, stream or other catchment, thus resulting in an accumulation of chemicals that break down very slowly.

Many buildings, particularly homes, are built on a slab of concrete and although termites can normally not penetrate concrete, cracks frequently develop in the concrete thus permitting the passage of termites there-

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through into the building. Even when the cracks are of a fine nature, they do provide the facility for the termites to burrow through the concrete by secreting materials which will break down the concrete along the fine cracks and thus permit the termites to burrow therethrough.

Also, in buildings erected on a concrete slab, it is common practice to provide pipes or conduits that extend through the concrete slab, such as water and waste pipes. As the concrete is cast in situ about these pipes or conduits, a small opening often develops about the pipe or conduit due to shrinkage of the concrete during curing.

These openings also provide access for termites through the concrete into the building structure. Thus even where a building is erected on a concrete slab, the ground beneath the slab must be treated with substantial quantities of chemicals to prevent access by termites to these openings.

It has also been known to use sheet metal as a barrier to termites such as galvanized steel plates on the top of stumps that support a building. Although this may be effective and commercially viable in relation to a building supported on stumps, it is expensive and has installation problems when considered in respect to a building supported on a concrete slab. Sheet metal is difficult to joint on-site in a manner to exclude passage of termites through the joint. Also, if the metal sheet is sufficiently strong to prevent accidental puncture by workman traffic on-site, it is then difficult to bend and shape to the required contours to fit with the building structure in a manner to provide an effective termite barrier. It would also be difficult to achieve an effective seal around pipes or conduits that must pass through the sheet.

Sheet metal, including stainless steel, as proposed in French Patent Application No. 79 04240 (Publication No. 2453952) is used to provide a barrier to termites travelling up a wall to enter a building in a manner analogous to a metal plate on a building stump. However, that sheet is preformed for a specific installation and is not appropriate for on-site construction to a range of shapes and configuration with the ability to maintain the integrity of a barrier against the passage of termites.

In addition to buildings, termites attack a wide range of structures and equipment including wooden poles and other wooden structures, underground cables and conduits made of a range of materials that will be attractive to termites. The only effective protection for such structures are chemical treatment or solid metal barriers that are resistant to termite attack.

It is therefore the object of the present invention to provide a barrier that will inhibit the passage of termites such as into a building or structure, the barrier being both effective and avoids the use of chemicals that are harmful to humans and/or the environment.

With this object in view there is provided by the present invention an improved termite barrier which is substantially resistant to termite chewing and corrosion, the termite barrier comprising a mesh sheet formed of a material resistant to breakdown in the environment of use and substantially resistant to termite secretions, said material having a hardness of not less than about Shore D70 for resistance to termite chewing, the pores of the mesh having a linear dimension in any direction less than the maximum linear dimension of the cross section of the head of the species of termite to be controlled.

Conveniently the pores of the mesh having a linear dimension in at least one direction, less than the mini-

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maximum linear dimension of the cross section of the head of the species of termite to be controlled. Preferably, the pores in the mesh are polygonal with a maximum diagonal dimension less than the maximum linear dimension of the cross section of the head of the species of termite to be controlled.

Termites of the species which attack wood, timber or the like are characterized by having a head formed of a hard substantially nondeformable structure. The body of these termites is a relatively soft and weak material. Also these termites have a head which is of substantially larger cross sectional dimensions than any other part of the termites body. Accordingly the head cross sectional size determines the ability of the termite to pass through an opening or passageway such as may exist in any form of termite barrier.

It is also known that termites secrete a liquid saliva or material which is capable of breaking down the physical structure of many materials into at least particles of a size that can be transported by the termites so as to facilitate the formation of a passage for the termites to pass through. The secreted material includes, amongst other components, acids such as formic acid.

The mesh sheet can be laminated with a flexible plastic sheet or sandwiched between two separate sheets.

Alternatively the mesh may be embedded in one plastic sheet, preferably with both sides of the mesh sheet covered by the plastic material. The combining of the mesh sheet and the plastic provide protection of the mesh sheet against damage that may cause displacement of the strands forming the mesh, with resultant enlargement of the openings or pores of the mesh in a specific area thereof to a size to permit the passage of the termites therethrough.

It is also to be appreciated that it is normal practice to provide a sheet of plastic material beneath the concrete slab upon which a building is to be erected to provide a barrier against the entry of moisture through the concrete into the building. Accordingly, by incorporating the mesh sheet with or into a plastic sheet, the resulting assembly can perform the two functions of providing a moisture and a termite barrier.

In practical application of the termite material a continuous layer thereof is positioned beneath an underside of the slab extending to a perimeter of the slab in all directions and upwardly about the perimeter of the slab to a distance above the slab and above the ground level adjacent thereto.

Another application is in a building structure erected on a ground level or near ground level concrete slab, and having a non integral termite resistant adjacent structure and a strip of the termite barrier material arranged with the respective marginal edge portions along the opposite longitudinal edges of the strip integrally secured to the slab and the adjacent structure to establish integrity of the connection between the slab and the adjacent structure against the passage of termites.

Preferably the mesh is woven from fine stainless steel wire or filaments of the appropriate material, such as stainless steel, that is resistant to corrosion by most materials that the mesh will be in contact with or associated with during its use in the termite barrier. In particular, the stainless steel resists rust through contact with moisture, and resists attack by most acid materials, including formic acid and other constituents of the secretion released by termites. However, it is to be understood that wires, strands or filaments of other materials may

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be used to produce the mesh sheet provided the material has the required resistance to breakdown when exposed to the environment and materials present in the ground and to termite attack, and is sufficiently hard that the particular species of termites can not chew through the strands or filaments. Other materials may be fibres of ceramics, glass or hard plastics.

It is known that the physical dimensions of termites vary from species to species and that in different areas of the world, different species of termites are predominant. Accordingly, the actual size of the pores of the mesh will be determined by the particular or range of termites to be controlled in the particular area where the mesh is to be used.

In the area around Perth, Western Australia, the most common and dangerous termites are of the *Coptotermes* family which have a head of a generally circular cross sectional somewhat flattened, as shown in FIG. 2B shape with a maximum linear dimension of between 1 to 1.5 mm. It is thus suitable to use in that area a mesh having pores or openings having a maximum dimension in any direction of not more than 0.85 mm, and preferably not more than 0.6 mm. For convenience in manufacture, the pores will normally be of a generally rectangular shape with the length of the sides 0.4 and 0.7 mm respectively.

The wire of filament may be of any convenient commercial size and typically may be in the range of 0.1 to 0.2 mm in diameter. The wire of filament may be of cross-section is preferred and more readily commercially available in the manufacture of mesh. The mesh may also be produced by stamping or punching holes of the required shape in sheet or film of metal or other suitable material of an appropriate thickness.

In most species of termites there are worker termites and soldier termites, the latter having larger heads than the worker termites in some species, but not all. It is thought to be normal for the soldier termites to lead or at least travel with the workers. Thus it is believed that if the mesh has pores of a size to prevent the passage of the soldier termites, this would be effective in inhibit the worker termites from passing alone through the mesh. The workers are the ones that cause the damage and must be stopped by the mesh.

The plastic material forming the sheet with which the mesh sheet can be laminated or embedded in, is conveniently PVC, but may be of any other suitable plastic which will provide a moisture barrier and will not deteriorate and break down when buried in the ground for the normal life expectancy of termite barriers which may be of the order of 15 to 30 years.

Conveniently, the termite barrier is produced in sheets of any convenient size and may be produced in a form of roll of a width of the order of 5 to 10 meters.

The advantages of the termite barrier as proposed above are principally that there is no harmful chemicals used in the creation of the barrier, the barrier will have an effective life commensurate with the life of the building. Further, the barrier can be conveniently transported and applied without the level of precautions required when handling pesticides or other chemicals and with a minimum of skill. Further as the barrier is in the form of a mesh, it is substantially more flexible and easily worked as by cutting, contouring and shaping, particularly in comparison with solid sheet metal.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will be more fully understood from the following description of the termite barrier as applied to buildings and other uses and as illustrated in the accompanying drawings, wherein:

FIG. 1 is a perspective view of a section of mesh as proposed to be used as a termite barrier;

FIG. 2a is an enlarged view of a portion of the mesh shown in FIG. 1;

FIG. 2b is an enlarged view from above of a typical termite

FIG. 2c is a cross sectional outline of the head of the typical termite along line 2c-2c of FIG. 2a.

FIG. 3 is a diagrammatic sectional view through portion of a building showing the application of the termite barrier thereto;

FIG. 4 is an enlarged view of the portion A shown in FIG. 3 where a conduit passes through the termite barrier;

FIG. 5 is a cross sectional view of a portion of a building to which the termite barrier has been applied in an alternative form to that shown in FIG. 3;

FIG. 6 is a cross-sectional view of portion of an alternative type of building construction to which the termite barrier has been applied;

FIG. 7 is a cross sectional view of portion of a further alternative type of building construction to which the termite barrier has been applied;

FIG. 8 is a cross sectional view of a portion of a building to which the termite barrier has been fitted after construction of the building;

FIG. 9 is a cross sectional view of portion of a building slab through which a conduit extends and having a termite barrier fitted thereto in an alternative manner to that shown in FIG. 4;

FIG. 10 is a perspective view of a cable in which the termite barrier has been incorporated; and

FIG. 11 is a sectional view through an upright post with the termite barrier fitted to the lower end thereof.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to FIGS. 1 and 2a-2c of the drawings, the termite barrier is in the form of a woven mesh 10 made of corrosion resistant stainless steel wires or filaments such as 304 grade stainless steel. The termite barrier may also include a flexible moisture impervious plastic sheet 121 formed to the woven mesh 10. Preferably, both sides of the woven mesh 10 are covered by a plastic sheet 121. The woven filaments form a series of pores or openings 15 in the mesh which are of a generally rectangular shape with the distance between the two more closely spaced sides 16 of the rectangle and the diagonal thereof is less than the maximum cross sectional dimensions of the head of the species of termite in respect of which the mesh is to form a barrier (FIG. 2c).

Referring now to FIG. 3 which shows a cross section of a portion of a building having an external double brick wall 20 and an internal single brick wall 21 in association with a poured concrete slab base 23. As is conventional in this form of construction, a continuous concrete footing 25 is formed to support the double brick wall 20. The perimeter of the concrete slab 23 has a perimetal portion 26 of increased depth also supported on the footing 25, and additional areas of increased

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depth are also provided beneath the internal single brick walls 21 as indicated at 28 in FIG. 3.

After the footings 25 have been poured and cured, an integral sheet of termite barrier mesh 30 is laid over the complete area where the slab 23 is to be poured with portion of the mesh overhanging beyond the footing 25 as will be referred to further hereinafter. When the mesh 30 is laid it is contoured to closely follow the contour of the ground including following the contour of any trenches or depressions in the ground, such as are required to accommodate the increased thickness areas 26 and 28 of the concrete slab. Because the termite barrier is in the form of a wire mesh, it can be readily deformed to follow these contours, and can be readily folded where there is excess material resulting from a change in the contour of the surface over which it is being laid. Where a pipe or duct such as indicated at 31 is required to pass through the slab 23, an appropriately located aperture is cut in the mesh 30 and the edge of the mesh clamped about the pipe or duct as hereinafter further described with reference to FIG. 4.

For convenience in handling, the mesh is produced in rolls of a convenient width such as 5 m, and the mesh is laid in position with the edges of adjacent strips overlapped and secured together in a multi fold lap-type joint wherein as each fold is made it is hammered or rolled flat throughout its length to provide a secure and permanent joint that is termite-proof.

After the strips of mesh have been placed in position and effectively secured along the overlapping edges, and the form-work for the concrete slab 23 is in position, the slab is poured in the conventional way with conventional steel reinforcement therein and a moist barrier sheet therebeneath (not shown). After the elapse of the appropriate curing time, the commencement of the erection of the external double brick wall of the building can be undertaken. In regard to the double brick wall construction as seen in FIG. 3 at 20 the overhanging edge portion 30a of the termite barrier mesh is folded upwardly so as to lie between the respective inner and outer layers of bricks. The outer layer 20a of bricks is built up to a level of at least 10 cm conveniently between 20 to 30 cm above the surrounding ground level, then the upper edge portion 30 of the barrier mesh is bent outwardly over the bricks forming the outer layer and thereafter, the rest of the bricks of the outer and inner wall are built up in the conventional manner.

There is thus formed a complete barrier in the perimeter double brick wall which is continuous with the barrier beneath the concrete slab to prevent the entry of termites into the interior of the building.

As an alternative, as shown in FIG. 5, the barrier mesh 30 projects outwardly beneath both layers of the double brick wall and is then bent upwardly as indicated at 30' against the external face of the perimeter wall. If desired, the barrier mesh at the upper end is folded and entered between two layers of bricks at a level of 10 or more cm above the ground level. Each of the above alternative constructions may be used in other forms of external wall constructions such as a timber framed inner wall and a brick outer wall. Also the construction shown in FIG. 5 may be used with a single timber framed external wall.

Where a conduit, such as 31 in FIG. 3 previously referred to, projects through the concrete slab 23, the barrier mesh has an aperture cut therein and prior to pouring the slab of the size smaller in diameter than the duct to be passed therethrough. The mesh about the

periphery of the hole so formed can then be stretched and formed into an upwardly or downwardly projecting flange 35 as seen in FIG. 4 and a clamp 36 is fitted around that flange to press it firmly into engagement with the external surface of the duct 31. The clamp 36 may conveniently be in the form of a conventional stainless steel hose clamp.

Preferably the flange 35 is formed to project upwardly from the normal level of the barrier mesh as shown in FIG. 4 so that when the slab is cast, the flange and the clamp secured about the duct will be embedded in the concrete forming the slab. It will be appreciated that a woven mesh is capable of being stretched without enlarging the holes or pores therein to a size to permit termites to pass through. The stretching is achieved by distorting the rectangular pores into a parallelogram shape thus reducing the dimensions of the pores in one direction while they are enlarged in the other direction. The reduction in one direction is sufficient to prevent the passage of termites.

Referring now to FIG. 6 of the drawings, there is shown in a simplified representation, a cross section through part of the slab and wall of a building. The footing 9 is constructed of concrete with appropriate metal reinforcement and is located some distance below the normal surface of the ground indicated at 11. The concrete beam 12 is normally precast and located on site in position on the footing 9, a series of such beams being provided to form the perimeter of the base of the building. As the beams 12 are precast and subsequently transported to the building site, it is not convenient to have barrier material embedded in the beam during the casting thereof, particularly as there is the possibility of damage to the barrier material during subsequent transportation and installation of the beams.

Following completion of the positioning of the perimeter beams 12 in place upon the footings, the area bounded by the beams is prepared for pouring of the concrete slab by the laying down and compacting of a bed of stones as indicated at 13 prior to the pouring of the full slab. Also prior to pouring of the slab, a continuous strip 15 of the termite barrier material is arranged so one marginal edge portion 16 is applied to the internal face of the beam 12 by appropriate mechanical fixings such as concrete nail and is overlaid by an adhesive cement layer as indicated at 17. After curing of the adhesive cement, the concrete floor slab 19 is poured and during such pouring the other marginal edge portion 18 of the barrier material strip 15 is embedded in the concrete slab.

The concrete of the slab may extend up to and abut the internal face of the beam 12, thereby also encasing the marginal portion 16 of the termite barrier strip that is adhered to the beam, or in alternative structures, an expansion gap, may as indicated at 22 be left between the perimeter edge of the slab 19 and the adjacent beam 12. Where such an expansion gap is left, as seen in FIG. 6, the barrier strip is provided with a re-entrant fold 21 extending the length thereof which will provide the flexibility and freedom for movement of the floor slab relative to the beam without the risk of fracture of the termite barrier strip. As shown in FIG. 6, the marginal edge portion 18 extends into the slab through the edge face thereof. However, it is to be understood that the termite barrier strip may also extend into the underside of the slab with the marginal portion then turned upwardly into the under side of the slab.

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It is also to be understood that the beam 12 as shown in FIG. 6 can be replaced by a case in situ or precast wall or similar upwardly extending member. In such an arrangement the barrier strip can be installed as shown in FIG. 6 or each marginal edge portion of the barrier strip 15 can be embedded in the slab and upright member respectively during casting of each or can be embedded in one and adhered or bonded to the other. In constructions where the slab and other member are cast separately, it is preferable to provide a re-entrant fold 21 extending the length of the barrier strip 15 to provide the ability for limited freedom of movement between the structural members without fracture of the barrier strip.

The above description of the installation of the termite barrier strip between a beam or wall and a slab may also be applied to providing an effective termite barrier between an existing concrete member and a newly cast member which may be functioning as an extension of an existing structure. In such circumstances, the same technique and layout as above discussed with respect to the beam and slab, may be applied to extending an existing slab.

Referring now to FIG. 8 of the drawings where there is illustrated a further application of the termite barrier strip along the external perimeter wall of an existing building. In this situation as illustrated, the existing building comprises a conventional footing 25, a floor slab 26 and an external wall 27, which may be in the form of a brick or poured concrete construction. In such an existing structure, there is not access to the underside of the slab 26 or the interface between the slab 26 and the wall 27 and accordingly, it is necessary to install the termite barrier strip externally. This is achieved by initially removing the earth adjacent the external wall to a depth to expose the existing concrete footing and then applying the barrier material strip 28 extending up the external face of the wall from the footing to a substantial distance above the ground level. The lower marginal edge of the termite barrier strip, which is seated on the footing 25, is secured thereto and to the lower portion of the wall by suitable adhesive cement as indicated at 29. The upper marginal portion of the termite barrier strip may be anchored to the wall by concrete nails of the like at suitable intervals along the length, or may also be secured thereto by the use of adhesive cement or both. In this regard, it is to be noted that in view of the inability of the termites to survive when exposed to ambient conditions, it is only necessary for the termite barrier strip 15 to extend approximately 20 to 30 centimeters above normal ground level to effectively prevent termites entering the building or to cause them to build external galleries that are readily visible and hence detectable.

There is shown in FIG. 7 a modification of the construction shown in FIG. 8 which is suitable for use during the construction of the building as compared with that shown in FIG. 7 which is more appropriate for application to existing buildings. In FIG. 7, the conventional footing 25, floor slab 26 and external wall structure 27 are the same as that previously described with respect to FIG. 8. The termite barrier strip 28 has a lower portion thereof embedded into the slab 26 during the pouring of the latter and is subsequently positioned so as to lie adjacent the wall 27 on the inner side thereof. During the laying of the bricks or blocks 29 which form the wall 27, the other marginal edge portion of the barrier strip 28 is positioned between two adja-

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cent bricks or blocks with the normal mortar or cement is located on either side of the marginal edge portion of the barrier strip so that when the wall is finished, the marginal edge portion is integral with the wall structure and will prevent the passage of termites.

It is to be understood that the term bricks or blocks includes building blocks of a range of materials including natural stone, rock, concrete and the brick or block may be of steel or aluminum in block or sheet form.

As previously referred to with respect to FIG. 4, it is frequently necessary in building structures to provide conduits which project through the concrete base slab of the structure, and the opening provided in the slab for this purpose is a potential avenue for the passage of termites. In order to preclude the passage of termites, a sheet 34 of border material with a central aperture can be placed over the conduit prior to the pouring of the slab with the inner peripheral portion of the sheet clamped above the exterior of the conduit such as by a conventional hose clip as indicated at 35 in FIG. 9. During the subsequent pouring of the slab, the outer perimeter areas 33 of the sheet of termite barrier material is embedded in the concrete when poured and thereby provide an effective barrier to termites between the conduit and the slab as commonly arises in the prior art structures.

In the previous description of the practical application of the present invention, reference has been made to using adhesive cement to secure a marginal edge portion of the barrier strip to an adjacent member which may be concrete or building bricks or blocks. The nature of the adhesive cement is a mixture of conventional cement and fine sand to which there is added a proprietary cement adhesive agent, such as that marketed in Australia under the Registered Trade Mark BONDCRETE. The sand used in the adhesive cement is selected so that it is sufficiently fine that the individual particles will freely pass through the openings in the mesh of the barrier strip thereby ensuring an effective bond between the barrier strip and the adjacent structural member and to prevent the possible formation of areas which are not adhered and therefore potential passages for termites.

The termite barrier material used as above described in relation to building may also be used as a termite barrier in respect of a wide range of structures incorporating material which is subject to attack by termites. One such additional application is around the portion of a post or like member which has the lower portion thereof buried in the ground. It is customary to treat the lower portion of such posts with appropriate chemicals to inhibit attack by termites, however, such chemicals have a limited effective life and environmental disadvantages. The termite barrier material of the present invention can be formed into a sleeve or pocket closed at one end and fitted over the portion of the post to be buried in the ground with the closed end lowermost as shown in FIG. 11. The sleeve is of sufficient length to project at least 10 to 20 centimeters above the ground level when the post is erected.

When the barrier mesh is to be used for this purpose, it may be initially woven in a tubular form and then cut to the requisite length for each particular application. The individual lengths of the tubular mesh are then folded at the bottom end to form an effective closure. This closure may be formed by flattening a portion of the end of the tube and then forming multiple folds therein with the folded portion being subsequently

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pressed or hammered flat to form a multi lapped joint which is not penetrable by the termites.

When the mesh is not produced in a tubular form, a flat piece of mesh may be rolled to form a tube with the respective edges of the strip folded in a multi lapped joint which is again rolled or hammered flat.

In the above description the application of the termite barrier material to the lower end of a post it is to be understood that the same construction of termite barrier can be used on any member which is to be buried in the ground, whether it is in the nature of or forming the function of a post or for any other purpose.

Another use for the termite barrier material is in protecting cables, particularly underground cables which incorporate a material which is susceptible to attack by termites. Such cables normally are of a construction as shown in FIG. 10 and have an outer protective covering 40 of a suitable material in addition to the wires or other elements 41 of the cable, such as electrical or optical cable, and the normal insulation or other coverings or wrappings 42 in which they are located.

It is known to weave in situ about the core of such cables fabric or wire reinforcing materials and it is proposed by the present invention that there also be woven about such cable cores a mesh of stainless steel wires or filaments 43 of the required dimensions to form a barrier against the passage of termites into the cable. If the termite barrier is not woven in situ about the core of the cable, then a wrapping of the barrier material of the required construction may be fitted about the cable with a longitudinal seam being formed by a lapped joint in the manner previously discussed. The termite barrier is located in or beneath the outer tough covering normally provided on such cables, as an alternative to about the exterior as shown in the drawing.

The termite barrier as previously described may be used in many other applications in addition to those described with reference to the accompanying drawings without departing from the present invention.

What is claimed is:

1. A termite barrier which is substantially resistant to termite chewing and corrosion the termite barrier comprising: a mesh sheet formed of a material resistant to breakdown in the environment of use and substantially resistant to termite secretions, said material having a hardness of not less than about Shore D70 for resistance to termite chewing, the mesh sheet having pores wherein each pore has a linear dimension in all directions less than the maximum linear dimension of the cross section of the head of the species of termite to be controlled.

2. The termite barrier as claimed in claim 1, wherein the pores of the mesh sheet have a linear dimension in at least one direction, less than the minimum linear dimension of the cross section of the head of the species of termite to be controlled.

3. The termite barrier as claimed in claim 1, wherein the pores of the mesh sheet are polygonal with the maximum diagonal dimension less than the maximum linear dimension of the cross section of the head of the species of termite to be controlled.

4. The termite barrier as claimed in claim 1, wherein the pores of the mesh sheet are rectangular in shape.

5. The termite barrier as claimed in claim 4, wherein the rectangular pores each have a diagonal dimension less than 0.85 mm.

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6. The termite barrier as claimed in claim 4, wherein the rectangular pores are dimensioned 0.40 mm by 0.70 mm.

7. The termite barrier as claimed in claim 1, wherein the mesh sheet is made of a corrosion resistant grade of stainless steel.

8. The termite barrier as claimed in claim 1, wherein the mesh sheet is bonded to or embedded in a moisture impervious sheet.

9. In combination with a building structure erected on a ground level concrete slab, a termite barrier which is substantially resistant to termite chewing and corrosion, the termite barrier comprising:

a mesh sheet made of a material substantially resistant to termite secretions and having a hardness of not less than about Shore D70 for resistance to termite chewing, the mesh sheet having pores wherein each pore has a linear dimension in all directions less than the maximum linear dimension of the cross-section of a head of a species of termite to be controlled, the termite barrier being positioned beneath an underside of the slab and extending to a perimeter of the slab in all directions and upwardly about the perimeter of the slab to a distance above the slab and above the ground level adjacent thereto.

10. The combinations as claimed in claim 9, further comprising a member projecting through the termite barrier and the slab, and a termite barrier sleeve integral with the termite barrier located beneath the slab and clamped in pressure engagement therewith about the perimeter of the member.

11. The combination as claimed in claim 10, wherein the sleeve is formed by cutting an opening in the termite barrier, said opening having a perimeter less than the perimeter of the member and stretching and deflecting the marginal area of termite barrier about the opening to form the sleeve.

12. A cable having a core of conductive member or members, and a protective covering surrounding the core, said covering including a termite barrier which is substantially resistant to termite chewing and corrosion, said termite barrier surrounding said core and comprising a mesh layer formed of a material substantially resistant to termite secretions and having a hardness of not less than about Shore D70 for resistance to termite chewing, the mesh sheet having pores wherein each pore has a linear dimension in all directions less than the maximum linear dimension of the cross-section of a head of a species of termite to be controlled.

13. In combination, a foundation structure for supporting a building, a termite barrier which is substantially resistant to termite chewing and corrosion for shielding the foundation structure to protect the building from termite invasion, the termite barrier comprising a mesh sheet formed of a material resistant to termite secretions and having a hardness of not less than about Shore D70 for resistance to termite chewing, the mesh sheet having pores wherein each pore has a linear

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dimension in all directions less than the maximum linear dimension of the cross-section of a head of a species of termite to be controlled, the termite barrier covering the foundation structure to protect the building supported thereon against termites.

14. In combination with a building structure erected on a ground level or near ground level concrete slab, and having a non integral termite resistant adjacent structure, a strip of termite barrier material which is substantially resistant to termite chewing or corrosion, the termite barrier comprising; a mesh sheet made of a material substantially resistant to termite secretions and having a hardness of not less than about Shore D70 for resistance to termite chewing, the mesh sheet having pores wherein each pore has a linear dimension in all directions less than the maximum linear dimension of the cross section of a head of a species of termite to be controlled, said strip of termite barrier material having respective marginal edge portions along opposite longitudinal edges of the strip integrally secured to the slab and the adjacent structure to establish integrity of the connection between the slab and the adjacent structure against the passage of termites.

15. The combination as claimed in claim 14, wherein the adjacent structure is a further concrete structure.

16. The combination as claimed in claim 14, wherein the adjacent structure is composed substantially of a building material selected from the group consisting of brick, natural stone, rock, concrete block, steel and aluminum in block or sheet form.

17. The combination claimed in claim 14, wherein the slab and the adjacent structure are each cast in-situ concrete components, the respective marginal edge portions of the termite barrier strip being embedded into the slab and adjacent structure during the pouring of the concrete.

18. The combination claimed in claim 14, wherein the slab and adjacent structure are each preformed and the combination further comprises an adhesive resistant to attack by termites for bonding the marginal edge portions of the strip of termite barrier material to the slab and adjacent structures.

19. The combination claimed in claim 18, further comprising a mechanical fastener for additionally securing the respective marginal edge portions of the termite barrier strip at spaced intervals along the length thereof.

20. A post or column to be erected with an end portion thereof embedded in the ground, said end portion being enclosed in a protective sleeve closed at one end, said sleeve being made from a mesh sheet of a material substantially resistant to termite secretions and having a hardness of not less than about Shore D70 for resistance to termite chewing, the mesh sheet having pores wherein each pore has a linear dimension in all directions less than the maximum linear dimension of the cross section of a head of a species of termite to be controlled.

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21. The termite barrier as claimed in claim 1 wherein the mesh sheet is in the form of a roll, whereby a strip of the mesh sheet can be removed from the roll as required.

22. The termite barrier as claimed in claim 1 wherein the mesh sheet comprises a plurality of strips of mesh material, the strips of mesh material being positioned in side-by-side relationship with adjacent edges of the strips overlapping one another and being secured together.

23. The termite barrier as claimed in claim 22 wherein the adjacent edges of the strips are secured together in a multi-fold lap-type joint.

24. The combination as claimed in claim 14 wherein the strip of termite barrier material has between the respective longitudinal marginal edge portions thereof a re-entrant fold which extends longitudinally to provide flexibility and freedom for movement of the concrete slab relative to the adjacent structure without fracture of the strip of termite barrier material.

25. A method of termite barrier installation for a building structure, comprising the step of:

during erection of the building structure on a slab of concrete at or near ground level, positioning a sheet in association with at least a portion of the slab, the sheet being formed of a material resistant to breakdown in the environment of use and substantially resistant to termite secretions, the material having a hardness of not less than about

Shore D70 for resistance to termite chewing, the sheet having pores wherein each pore has a linear dimension in all directions less than the maximum linear dimension of the cross section of the head of the species of termite to be controlled, to thereby exclude entry of termites into the building structure through said portion of the slab.

26. The method of termite barrier installation as claimed in claim 25 wherein the sheet is positioned beneath the slab.

27. The method of termite barrier installation as claimed in claim 26 wherein the slab has a perimeter, wherein the sheet is positioned beneath the slab to extend to the perimeter of the slab in all directions and upwardly about said perimeter to terminate with an outer edge portion of the sheet at a distance above adjacent ground level.

28. The method of termite barrier installation as claimed in claim 27 wherein the outer edge portion of the sheet terminates above the slab.

29. The method of termite barrier installation as claimed in claim 26 wherein the slab is cast in-situ, and wherein the sheet is positioned prior to pouring of concrete over the sheet to cast the slab.

30. The method of termite barrier installation as claimed in claim 29 wherein the sheet completely covers a ground surface area where the slab is to be poured, and further comprising the step of:

contouring the sheet to closely follow contours of the
ground surface area where the slab is cast.

31. The method of termite barrier installation as claimed in
claim 25 wherein the sheet is positioned above the slab.

32. The method of termite barrier installation as claimed in
claim 25 wherein the sheet is embedded in the slab.

33. The method of termite barrier installation as claimed in
claim 25 wherein the building structure includes a termite resistant
structure adjacent to and non-integral with the slab, and further
comprising the step of:

integrally securing an outer edge portion of the sheet to the
termite resistant structure.

34. The method of termite barrier installation as claimed in
claim 33, wherein the integrally securing step comprises:

adhesively bonding the outer edge portion of the sheet to
the termite resistant structure.

35. The method of termite barrier installation as claimed in
claim 34, wherein the bonding is achieved using a bonding material
which is resistant to termites.

36. The method of termite barrier installation as claimed in
claim 33, wherein the integrally securing step comprises:

mechanically fixing the outer edge portion of the sheet to
the termite resistant structure.

37. The method of termite barrier installation as claimed in claim 33, wherein the termite resistant structure is of concrete, and wherein the integrally securing step comprises:

casting the termite resistant structure in-situ such that the outer edge portion of the sheet is embedded into the termite resistant structure.

38. The method of termite barrier installation as claimed in claim 33, wherein the termite resistant structure is a wall of brick, and wherein the integrally securing step comprises:

constructing the wall of brick with the outer edge portion of the sheet embedded in the wall between two layers of bricks.

39. The method of termite barrier installation as claimed in claim 25 comprising the further steps of:

forming at least a portion of the sheet into a termite barrier flange; and

clamping the termite barrier flange in pressure engagement about a perimeter of a member projecting through the slab.

40. The method of termite barrier installation as claimed in claim 39 wherein the termite barrier flange is formed by cutting an opening in the sheet, said opening having a perimeter smaller than the perimeter of the member, and stretching and deflecting a marginal area of the sheet about the opening to form the termite barrier flange about the member.

41. A method of termite barrier installation in a building

structure erected on a concrete slab at or near ground level and having an adjacent structure which is non-integral to the concrete slab and is termite resistant, the method comprising the steps of:

integrally securing a first marginal edge portion of a strip to a portion of the slab, the strip being formed of a material resistant to breakdown in the environment of use and substantially resistant to termite secretions, the material having a hardness of not less than about Shore D70 for resistance to termite chewing, the strip having pores wherein each pore has a linear dimension in all directions less than the maximum linear dimension of the cross section of the head of the species of termite to be controlled, the strip having a second marginal edge portion opposite the first marginal edge portion; and
integrally securing the second marginal edge portion of the strip to the adjacent structure, to thereby provide integrity between the slab and the adjacent structure against passage of termites and thereby exclude entry of termites into the building structure.

42. The method of termite barrier installation as claimed in claim 41 wherein the strip is integrally secured to the slab by adhesive bonding.

43. The method of termite barrier installation as claimed in claim 42, wherein the bonding is achieved using a bonding material which is resistant to termites.

44. The method of termite barrier installation as claimed in

claim 41 wherein the strip is integrally secured to the slab by mechanical fixing.

45. The method of termite barrier installation as claimed in claim 41 wherein the strip is integrally secured to the adjacent structure by adhesive bonding.

46. The method of termite barrier installation as claimed in claim 45, wherein the bonding is achieved using a bonding material which is resistant to termites.

47. The method of termite barrier installation as claimed in claim 41 wherein the strip is integrally secured to the adjacent structure by mechanical fixing.

48. The method of termite barrier installation as claimed in claim 41 wherein the slab is cast in-situ and wherein the strip is integrally secured to the slab by embedding the first marginal edge portion into the slab during casting.

49. The method of termite barrier installation as claimed in claim 41 wherein the adjacent structure is cast in-situ and wherein the strip is integrally secured to the adjacent structure by embedding the second marginal edge portion into the adjacent structure during casting.

50. The method of termite barrier installation as claimed in claim 41 wherein the adjacent structure comprises a wall of brick construction and wherein the strip is integrally secured to the adjacent structure by embedding the second marginal edge portion

in the wall between two layers of bricks.

51. A method of termite barrier installation for a building structure, comprising the steps of:

positioning a termite barrier flange around a member projecting through a slab of concrete at or near ground level, the termite barrier flange comprising an inner peripheral portion defining an opening for the member and an outer peripheral portion extending from the inner peripheral portion;

establishing a seal against the passage of termites between the inner peripheral portion and the member; and integrally securing the outer peripheral portion to the slab, such that the termite barrier flange protects against the passage of termites between the slab and the member projecting therethrough.

52. The method of termite barrier installation as claimed in claim 51 wherein the termite barrier flange is formed of a mesh material resistant to breakdown in the environment of use and substantially resistant to termite secretions, the mesh material having a hardness of not less than about Shore D70 for resistance to termite chewing, the mesh material having pores wherein each pore has a linear dimension in all directions less than the maximum linear dimension of the cross section of the head of the species of termite to be controlled.

53. The method of termite barrier installation as claimed in claim 51 wherein the slab is cast in-situ and wherein the termite barrier flange is integrally secured to the slab by embedding the

outer peripheral portion into the slab during casting.

54. The method of termite barrier installation as claimed in claim 51 wherein the seal is established by clamping the inner peripheral portion in pressure engagement with the member about a perimeter of the member.

55. A method of termite barrier installation for a building structure, comprising the step of:

during erection of the building structure on a foundation structure, covering the foundation structure with a termite barrier flange, the termite barrier flange being formed of a material resistant to breakdown in the environment of use and substantially resistant to termite secretions, the material having a hardness of not less than about Shore D70 for resistance to termite chewing, the material having pores wherein each pore has a linear dimension in all directions less than the maximum linear dimension of the cross section of the head of the species of termite to be controlled, to thereby exclude entry of termites into the building structure through said foundation structure.

56. A termite barrier flange for preventing passage of termites between a cast concrete slab and a member projecting through the slab, said termite barrier flange comprising a body having an inner peripheral portion defining an opening in which the member is received and an outer peripheral portion adapted to be integrally secured to the slab.

57. The termite barrier flange as claimed in claim 56 wherein the outer peripheral portion comprises perforations adapted to be embedded in the slab during pouring of the slab for integrally securing the outer peripheral portion to the slab.

58. The termite barrier flange as claimed in claim 56 wherein the inner peripheral portion comprises a cylindrical sleeve adapted to be clamped in pressure engagement with the member about a perimeter of the member.

59. The termite barrier flange as claimed in claim 58 further comprising a clamp for clamping the cylindrical sleeve in pressure engagement with the member.

60. The termite barrier flange as claimed in claim 56 wherein the outer peripheral portion extends radially outward from the inner peripheral portion.

61. The termite barrier flange as claimed in claim 56 wherein the body is formed from a material substantially resistant to termite secretions and having a hardness of not less than about Shore D70 for resistance to termite chewing, the material having pores wherein each pore has a linear dimension in all directions less than the maximum linear dimension of the cross section of a head of a species of termite to be controlled.

**VERIFIED STATEMENT CLAIMING
SMALL ENTITY STATUS
(SMALL BUSINESS CONCERN)**

Attorney Docket No.

T257.312-3

Inventor(s): Vasilios Toutountzis

Title: TERMITE CONTROL

With respect to the invention described in

- ☒ the reissue application filed herewith:
- ☐ application Serial No. _____, filed _____:

I. IDENTIFICATION OF DECLARANT AND ANY RIGHTS AS A SMALL ENTITY

I am:

- ☐ the owner of the small business concern identified below:
- ☒ an official of the small business concern empowered to act on behalf of the concern identified below:

NAME OF CONCERN
ADDRESS OF CONCERN

TERMIMESH AUSTRALIA PTY LTD
10 Westchester Road,

Malaga, 6062 Western Australia, Australia

The above-identified small business concern qualifies as a small business concern as defined in 13 CFR § 121.12, and reproduced in 37 CFR § 1.9(d), for purposes of paying reduced fees under 35 USC §§ 41(a) and (b).

II. OWNERSHIP OF INVENTION BY DECLARANT

Rights under contract or law remain with or have been conveyed to the above-identified concern. If the rights held are not exclusive, each individual, concern or organization having rights to the invention is listed below and no rights to the invention are held by any person who could not be classified as (1) an independent inventor under 37 CFR § 1.9(c) if that person had made the invention, (2) a small business concern under 37 CFR § 1.9(d) or (3) a non-profit organization under 37 CFR § 1.9(e).

(check one)

☒ There is no such person, concern, or organization.

☐ The person, concerns or organizations are listed below:

NAME OF ORGANIZATION _____

ADDRESS OF ORGANIZATION _____

- ☐ Individual
☐ Small Business Concern
☐ Nonprofit Organization

NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities (37 CFR § 1.27).

III. ACKNOWLEDGEMENT OF DUTY TO NOTIFY PTO OF STATUS CHANGE

I acknowledge the duty to file, in this application or patent, notification of any change resulting in loss of entitlement to small entity status pursuant to 37 CFR § 1.28(b).

IV. DECLARATION

All statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

V. SIGNATURES

Signature:  _____

Date: 16 - MAY 97

Printed Name: Vasilios Toutountzis

Title: Managing Director

Fig 1.

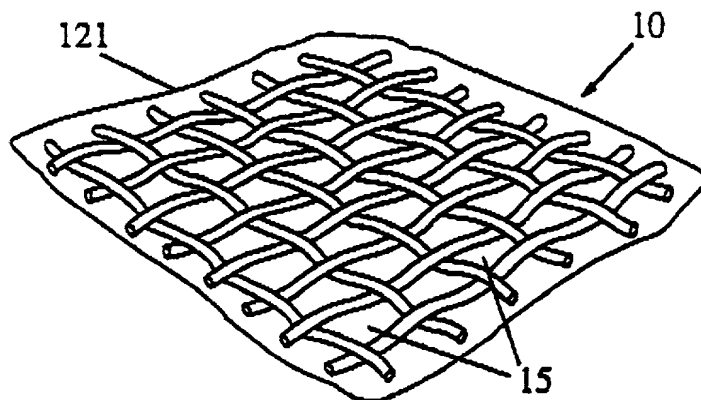


Fig 2A.

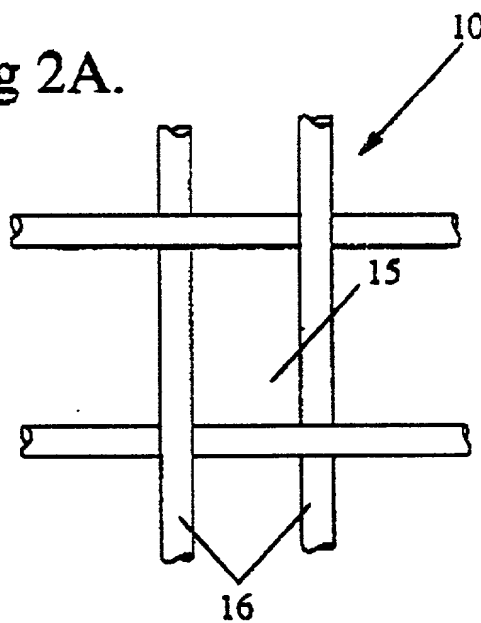


Fig 2B.

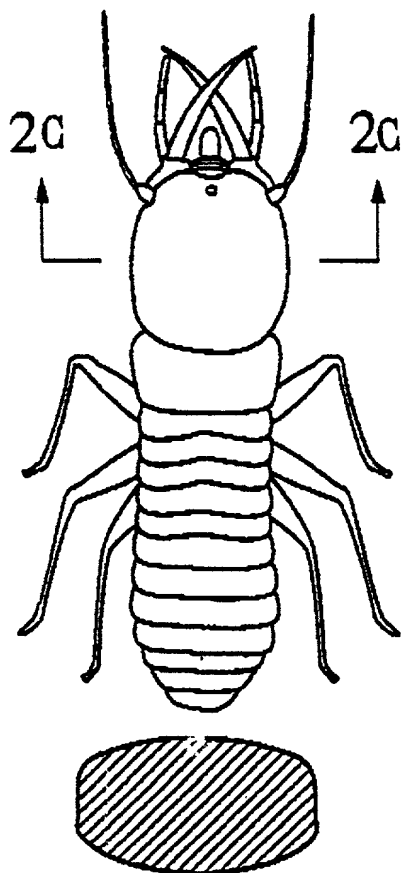
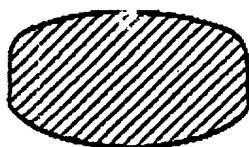


Fig 2C



04521-1049
66T20T-7252460

Fig 3.

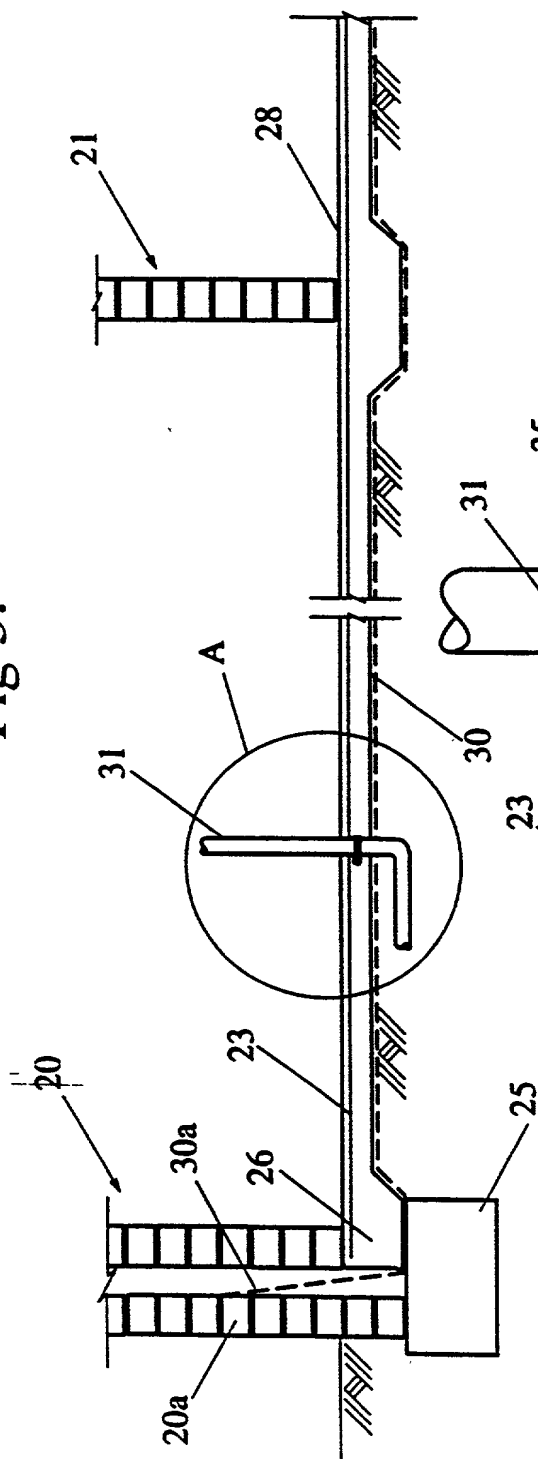
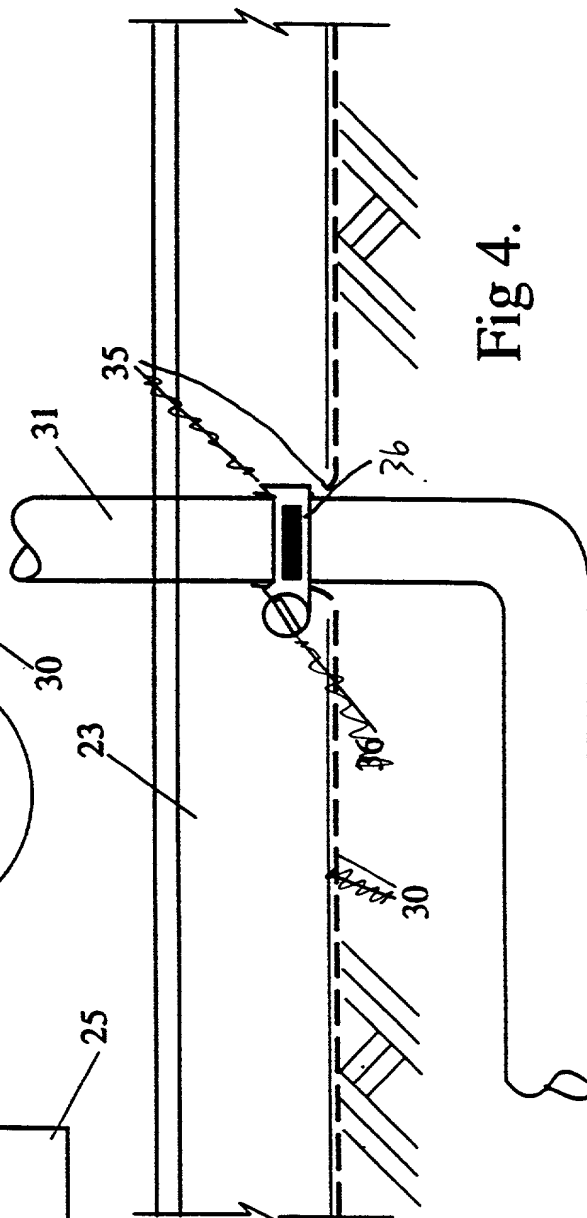


Fig 4.



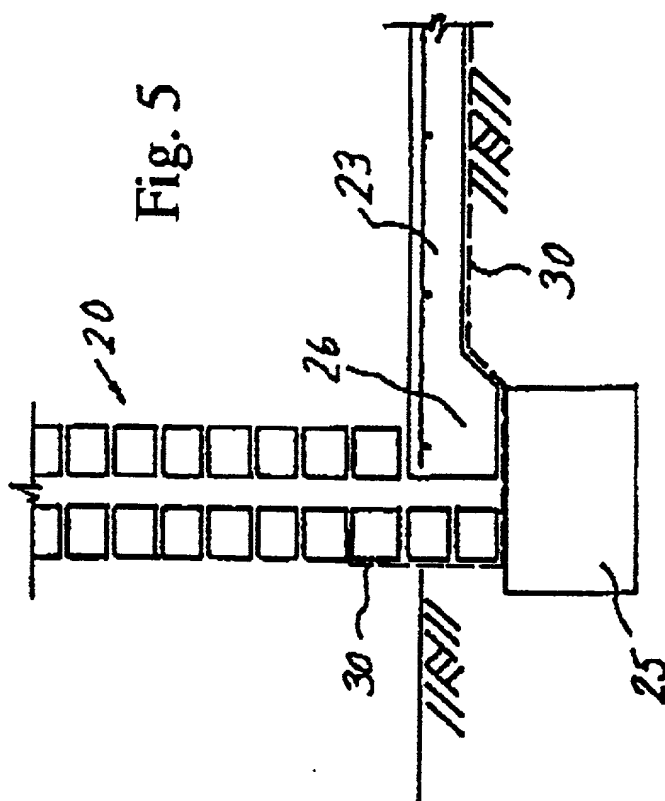
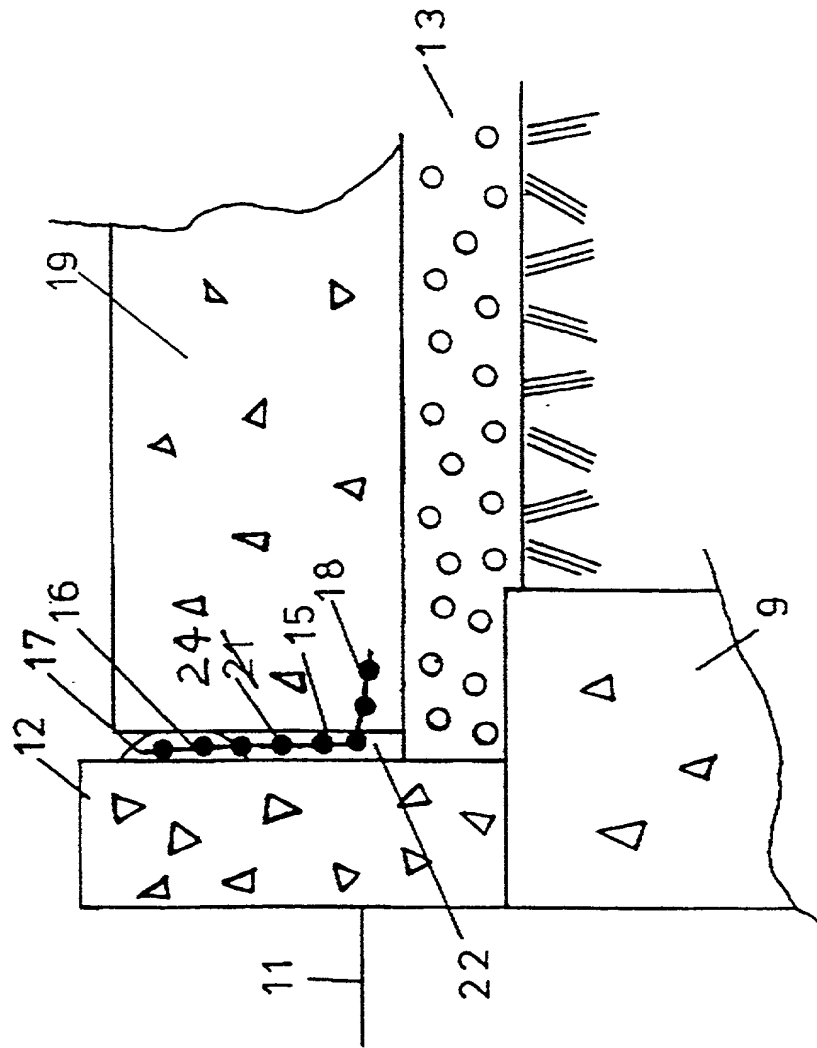


Fig. 6



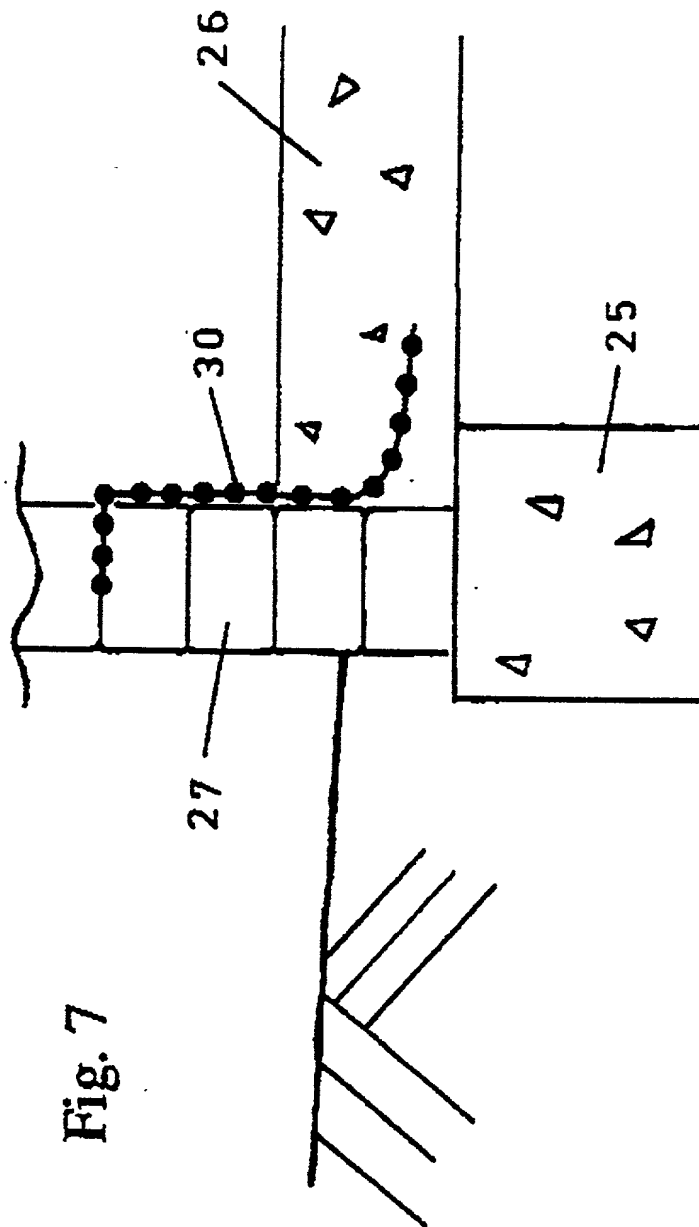
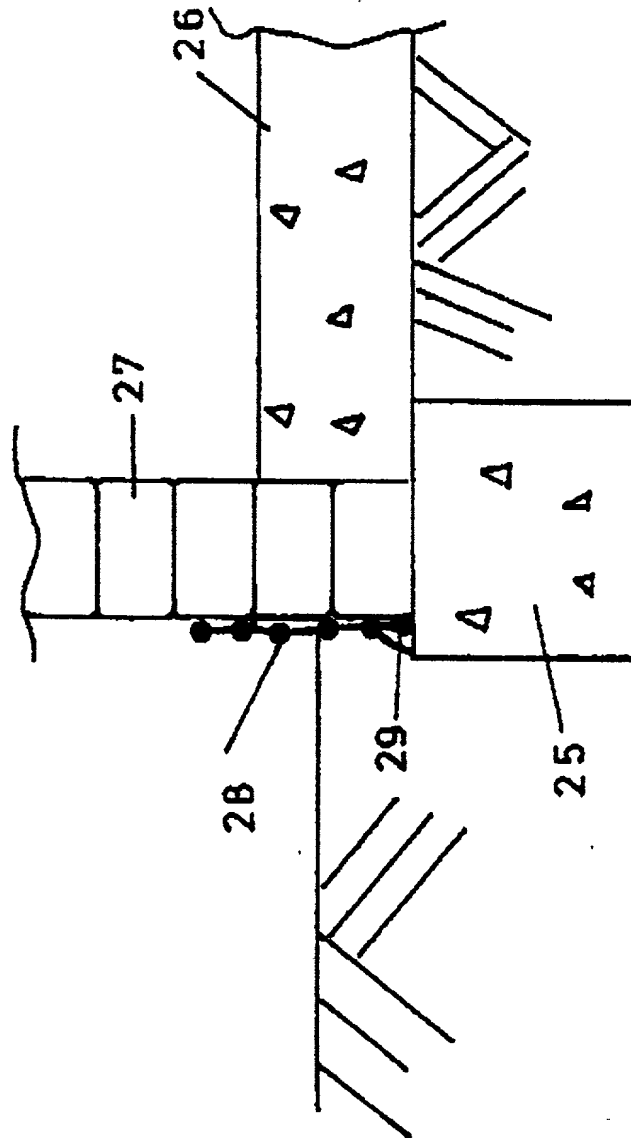


Fig. 8



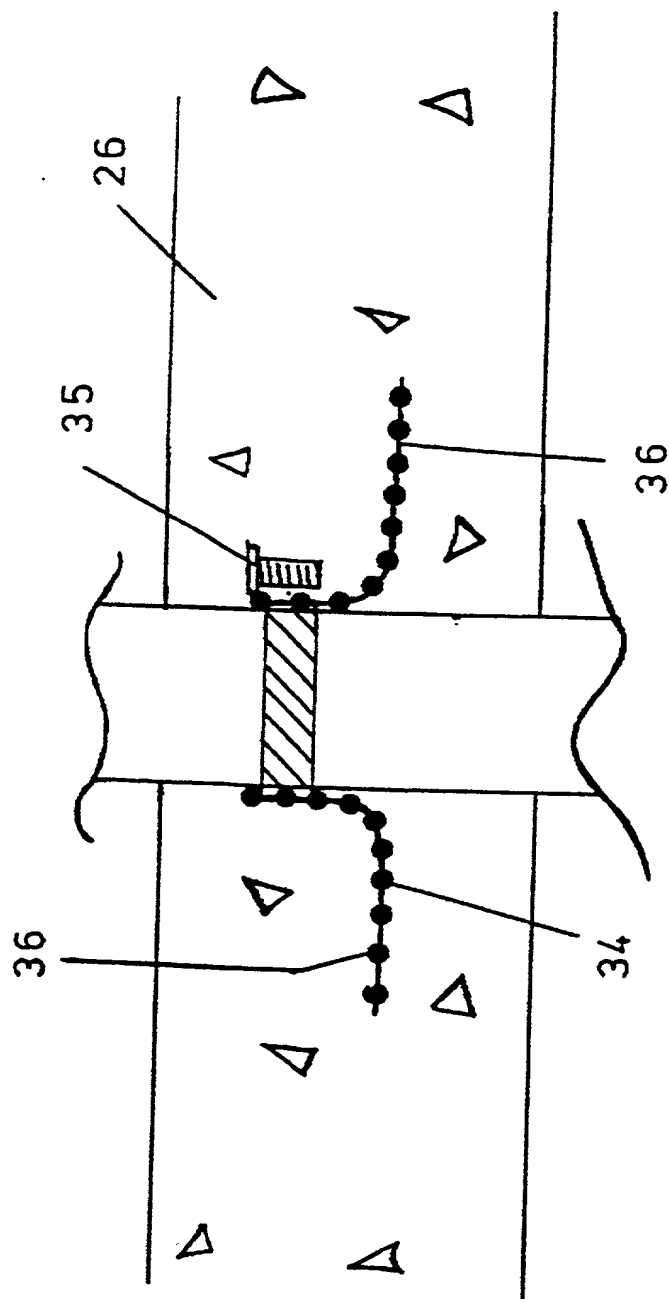
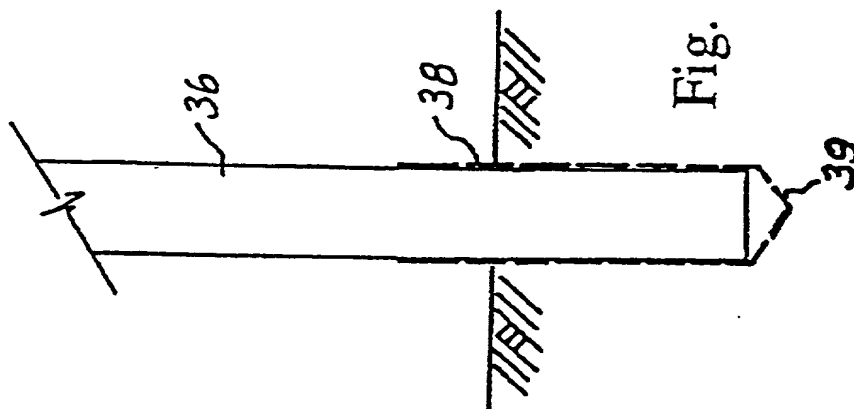
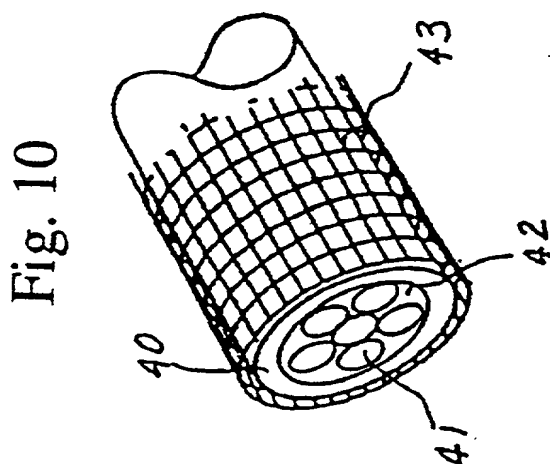


Fig. 9



SUPPLEMENTAL DECLARATION

IN ☐ ORIGINAL ☐ NATIONAL STAGE OF PCT APPLICATION
☐ DIVISIONAL ☐ CONTINUATION
☐ CONTINUATION-IN-PART ☒ REISSUE

Attorney Docket No.

T257.312-3

SPECIFICATION AND INVENTORSHIP IDENTIFICATION

As a below named inventor, I declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and ☒ sole ☐ joint inventor of the subject matter which is described and claimed, and for which a reissue is sought in the present application, on the invention entitled TERMITE CONTROL, the specification of which:

- ☒ was filed on March 30, 1993 as Appln. Serial No. 08/040,305.
- ☒ and was granted as U.S. Patent No. 5,417,017 on May 23, 1995.
- ☒ was filed on May 20, 1997 as Appln. Serial No. 08/859,561.
- ☒ and is amended in the Amendment attached hereto.

ACKNOWLEDGEMENT OF REVIEW OF PAPERS AND DUTY OF CANDOR

I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above, together with any amendment submitted herewith. I acknowledge the duty to disclose information which is known to me to be material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, § 1.56.

PRIORITY CLAIM (35 USC § 119)

I claim foreign priority benefits under Title 35, United States Code, § 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)

Number	Country	Day/Month/Year Filed	Priority Claimed
<u>PL 7520</u>	<u>Australia</u>	<u>February 25, 1993</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<u>PL 6128</u>	<u>Australia</u>	<u>September 4, 1989</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

05425271 102159

PRIORITY CLAIM (35 USC § 120)

I claim the benefit under Title 35, United States Code, § 120 of any United States application(s) listed below. Insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35 United States Code § 112, I acknowledge the duty to disclose to the Patent Office all information known to me to be material to patentability as defined in Title 37 Code of Federal Regulations § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

U.S. Serial No.	International Appln. No. (under PCT)	Filing Date	Status (patented, pending, abandoned)
<u>07/575,908</u>	<u> </u>	<u>August 31, 1990</u>	<u>abandoned</u>
<u>07/825,299</u>	<u> </u>	<u>January 23, 1992</u>	<u>abandoned</u>

STATEMENT OF WHOLE OR PARTIAL INOPERATIVENESS OR INVALIDITY

1. I believe United States Letters Patent No. 5,417,017 (the '017 patent) to be wholly or partly inoperative or invalid by reason of a defective specification for failure to state priority of Australian patent application PJ 6128, filed September 4, 1989 on the face of the patent.

2. I believe the '017 patent to be wholly or partly inoperative or invalid by reason of failure to identify all the prior art references cited to the USPTO on the face of the patent.

3. I believe the '017 patent to be partly inoperative or invalid by reason of claiming my invention in claims of a lesser scope than that to which I am entitled, and in terms which do not fully define the intended scope of my invention.

4. I have once stated an error upon which this reissue application is based in my Declaration signed May 16, 1997 and filed with the original filing papers for this reissue application. One or more of the errors previously stated in my Declaration signed May 16, 1997 are still being corrected through this reissue application.

5. All errors being corrected in the reissue application up to the time of filing this Supplemental Declaration arose without any deceptive intention on the part of the applicant.

DECLARATION

I declare that all statements made herein that are of my own knowledge are true and that all statements that are made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

DESIGNATION OF CORRESPONDENCE ADDRESS

Please address all correspondence and telephone calls to Jeffrey D. Shewchuk in care of:

KINNEY & LANGE, P.A.
Suite 1500
625 Fourth Avenue South
Minneapolis, Minnesota 55415-1659
Phone: (612) 339-1863 Fax: (612) 339-6580

Full name of sole inventor: Vasilios Tontountzis

Signature: X 19th July 1998

Date: X 19th July 1998

Residence: Sorrento, Australia

Citizenship: Australia

P.O. Address: 4 Nerida Place, Sorrento, Western Australia 6020, Australia

DECLARATION

IN ☐ ORIGINAL ☐ NATIONAL STAGE OF PCT APPLICATION
☐ DIVISIONAL ☐ CONTINUATION
☐ CONTINUATION-IN-PART ☒ REISSUE

Attorney Docket No.

T257312-3

SPECIFICATION AND INVENTORSHIP IDENTIFICATION

As a below named inventor, I declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and ☒ sole ☐ joint inventor of the subject matter which is described and claimed, and for which a reissue is sought in the present application, on the invention entitled TERMITE CONTROL, the specification of which:

- ☒ is attached hereto.
- ☒ was filed on March 30, 1993 as Appln. Serial No. 08/040,305,
☐ and was amended on _____.
- ☒ and was granted as U.S. Patent No. 5,417,017 on May 23, 1995.
- ☐ was described and claimed in PCT International Application No. _____, filed on _____,
☐ and was amended under PCT Article 19 on _____.

ACKNOWLEDGEMENT OF REVIEW OF PAPERS AND DUTY OF CANDOR

I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above, together with any amendment submitted herewith. I acknowledge the duty to disclose information which is known to me to be material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, § 1.56.

PRIORITY CLAIM (35 USC § 119)

I claim foreign priority benefits under Title 35, United States Code, § 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)

Number	Country	Day/Month/Year Filed	Priority Claimed
<u>PL 7520</u>	<u>Australia</u>	<u>February 25, 1993</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<u>PL 6128</u>	<u>Australia</u>	<u>September 4, 1989</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

PRIORITY CLAIM (35 USC § 120)

I claim the benefit under Title 35, United States Code, § 120 of any United States application(s) listed below. Insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35 United States Code § 112, I acknowledge the duty to disclose to the Patent Office all information known to me to be material to patentability as defined in Title 37 Code of Federal Regulations § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

U.S. Serial No.	International Appln. No. (under PCT)	Filing Date	Status (patented, pending, abandoned)
<u>07/575,908</u>	<u> </u>	<u>August 31, 1990</u>	<u>abandoned</u>
<u>07/825,299</u>	<u> </u>	<u>January 23, 1992</u>	<u>abandoned</u>

STATEMENT OF WHOLE OR PARTIAL INOPERATIVENESS OR INVALIDITY

1. I am neither educated nor experienced in either Australian or United States patent law. United States Letters Patent No. 5,417,017 (the '017 patent) is the first U.S. patent sought and obtained by myself and TERMIMESH AUSTRALIA PTY LTD., assignee of the '017 patent.
2. I believe the '017 patent to be wholly or partly inoperative or invalid by reason of a defective specification for failure to state priority of Australian patent application PJ 6128, filed September 4, 1989 on the face of the patent.
3. The '017 patent issued from Application No. 08/040,305 (the '305 application) which in turn claimed priority from Application No. 07/825,299 (the '299 application). A priority claim to Australian patent application PJ 6128 was made in the Declaration which I signed for the '305 application on March 28, 1993, which Declaration was filed with the United States Patent and Trademark Office ("USPTO") on May 26, 1993. The Official Filing Receipt for the '305 application identifies the claim of priority to Australian patent application PJ 6128, as well as to Australian patent application PL 7520.

4. A certified copy of Australian patent application PJ 6128 was filed in the '299 application. I am informed and believe that the USPTO never requested an additional certified copy of Australian patent application PJ 6128 for the '305 application.

5. I believe the error of failure to state priority of Australian patent application PJ 6128 on the face of the patent arose, without any deceptive intention, in the printing of the '017 patent. I did not discover the omission of listing the claim of priority to Australian patent application until after issuance of the '017 patent.

6. I believe the '017 patent to be wholly or partly inoperative or invalid by reason of failure to identify all the prior art references cited to the USPTO on the face of the patent.

7. At my instructions, an Information Disclosure Statement was filed with the Patent and Trademark Office on June 25, 1993, identifying seventeen (17) references for consideration of the Examiner. The return postcard indicates that the Information Disclosure Statement was received by the Patent and Trademark Office on June 28, 1993. None of the references cited in the Information Disclosure Statement is listed in the "References Cited" section on the face of the '017 patent.

8. I believe the error of failure to identify the references cited in the Information Disclosure Statement in the "References Cited" section on the face of the '017 patent arose, without any deceptive intention, due to error by the USPTO. I did not discover the omission of the references until after issuance of the '017 patent.

9. I believe the '017 patent to be partly inoperative or invalid by reason of claiming my invention in claims of a lesser scope than that to which I am entitled, and in terms which do not fully define the intended scope of my invention.

10. To obtain patent rights in my invention, I retained the services of the Registered Australian Patent Attorneys from the Watermark firm of Perth, Western Australia ("the Watermark firm"). I discussed my invention with the Watermark firm, who prepared and filed Australian patent application PL 7520 and Australian patent application PJ 6128 at my instructions.

11. I requested the Watermark firm to seek patent protection for my invention in the United States. The Watermark firm retained the services of Kinney & Lange, P.A., Minneapolis, Minnesota, to follow their instructions in filing patent applications on my behalf.

12. My invention, as disclosed in my Australian and U.S. patent applications, involves the use of a mesh sheet material of appropriate pore size and hardness as a termite barrier. As disclosed in my Australian and U.S. patent applications, my invention also involves implementing the mesh sheet material as a termite barrier in a building structure, covering a cable, in a foundation structure for supporting a building, as a termite barrier flange, and enclosing a portion of a post or column embedded in the ground.

13. It was my intention that the patent include full coverage of the method of installing the wire mesh to the foundation of a building. Because I considered my U.S. and Australian patent applications fully described that invention, I believed my '017 patent adequately covered my invention.

14. After issuance of '017 patent, I retained the services of new Australian counsel beginning in January 1996, the Registered Australian Patent Attorneys of Wray & Associates of Perth, Western Australia ("my new counsel").

15. On or about April 23, 1996, I attended a meeting of the Board of Directors of TERMIMESH AUSTRALIA PTY LTD. At this board meeting, Dr. Laurie Glossop

reported about a trip he had made to Hawaii on behalf of TERMIMESH AUSTRALIA PTY LTD. in relation to trials of the patented system by the University of Hawaii Department of Entomology. Dr. Glossop further reported that he had attended a meeting with one Mr. Martin Hsia, a patent attorney of the firm of Cades, Schute, Fleming & Wright representing a Hawaiian franchisee of TERMIMESH AUSTRALIA PTY LTD. Dr. Glossop reported that Mr. Hsia had indicated that the patent would be better structured to include claims to a method of installation.

16. Subsequent to this board meeting, I discussed the matter with my new counsel. My new counsel explained to me for the first time that Australian and U.S. patent law have differences that affect the scope of protection that I had believed was provided by my '017 patent. In particular, I am informed that Australian patent law may allow the patenting of a new and previously unknown use for a known substance or structure without any specific requirements with regard to the drafting of the claims covering an invention of this type. My invention falls into this category, as it concerns the new and previously unknown use of a sheet material of specific pore size and hardness as a termite barrier, although the sheet material had previously been known for other, unrelated uses.

17. My new counsel confirmed Dr. Glossop's report that the claims of my '017 patent do not expressly cover the method of installation of the sheet material as a termite barrier. I had previously believed that the '017 patent did expressly cover such uses. In the circumstances, it appears that either I had failed to clearly convey to my previous counsel at the Watermark firm, and/or my previous counsel had not fully understood my instructions, that my patent should cover such uses.

18. As a result, I claimed less in the '017 patent than I had a right to claim. In particular, the original patent application and the issued '017 patent fails to state "method of termite barrier installation" claims for use of the termite barrier.

19. In particular, my invention entails, as defined by new claim 25, the method of termite

barrier installation during erection of the building structure on a slab of concrete at or near ground level which includes the step of positioning a sheet in association with at least a portion of the slab, the sheet being formed of a material resistant to breakdown in the environment of use and substantially resistant to termite secretions, the material having a hardness of not less than about Shore D70 for resistance to termite chewing, the sheet having pores wherein each pore has a linear dimension in all directions less than the maximum linear dimension of the cross section of the head of the species of termite to be controlled, to thereby exclude entry of termites into the building structure through said portion of the slab.

20. The method of termite barrier installation may also entail additional steps or further details as defined by dependent claims 26-40. In particular, my invention in certain embodiments entails:

- A. (As defined in dependent claim 26) A method of termite barrier installation wherein the sheet is positioned beneath the slab.
- B. (As defined in dependent claim 27) A method of termite barrier installation wherein the slab has a perimeter, wherein the sheet is positioned beneath the slab to extend to the perimeter of the slab in all directions and upwardly about said perimeter to terminate with an outer edge portion of the sheet at a distance above adjacent ground level.
- C. (As defined in dependent claim 28) A method of termite barrier installation wherein the outer edge portion of the sheet terminates above the slab.
- D. (As defined in dependent claim 29) A method of termite barrier installation wherein the slab is cast in-situ, and wherein the sheet is positioned prior to pouring of concrete over the sheet to cast the slab.
- E. (As defined in dependent claim 30) A method of termite barrier installation wherein the sheet completely covers a ground surface area where the slab is to be poured, and further comprising the step of contouring the sheet to closely follow contours of the ground surface area where the slab is cast.
- F. (As defined in dependent claim 31) A method of termite barrier installation

wherein the sheet is positioned above the slab.

- G. (As defined in dependent claim 32) A method of termite barrier installation wherein the sheet is embedded in the slab.
- H. (As defined in dependent claim 33) A method of termite barrier installation wherein the building structure includes a termite resistant structure adjacent to and non-integral with the slab, and further comprising the step of integrally securing an outer edge portion of the sheet to the termite resistant structure.
- I. (As defined in dependent claim 34) A method of termite barrier installation wherein the integrally securing step comprises adhesively bonding the outer edge portion of the sheet to the termite resistant structure.
- J. (As defined in dependent claim 35) A method of termite barrier installation wherein the bonding is achieved using a bonding material which is resistant to termites.
- K. (As defined in dependent claim 36) A method of termite barrier installation wherein the integrally securing step comprises mechanically fixing the outer edge portion of the sheet to the termite resistant structure.
- L. (As defined in dependent claim 37) A method of termite barrier installation wherein the termite resistant structure is of concrete, and wherein the integrally securing step comprises casting the termite resistant structure in-situ such that the outer edge portion of the sheet is embedded into the termite resistant structure.
- M. (As defined in dependent claim 38) A method of termite barrier installation wherein the termite resistant structure is a wall of brick, and wherein the integrally securing step comprises constructing the wall of brick with the outer edge portion of the sheet embedded in the wall between two layers of bricks.
- N. (As defined in dependent claim 39) A method of termite barrier installation comprising the further steps of forming at least a portion of the sheet into a termite barrier flange; and clamping the termite barrier flange in pressure engagement about a perimeter of a member projecting through the slab.
- O. (As defined in dependent claim 40) A method of termite barrier installation wherein the termite barrier flange is formed by cutting an opening in the sheet,

said opening having a perimeter smaller than the perimeter of the member, and stretching and deflecting a marginal area of the sheet about the opening to form the termite barrier flange about the member.

21. The method of termite barrier installation of my invention also entails installation of a termite barrier strip between a concrete slab and an adjacent structure. In particular, my invention entails, as defined by new claim 41, the method of termite barrier installation in a building structure erected on a concrete slab at or near ground level and having an adjacent structure which is non-integral to the concrete slab and is termite resistant, the method comprising the steps of:

integrally securing a first marginal edge portion of a strip to a portion of the slab, the strip being formed of a material resistant to breakdown in the environment of use and substantially resistant to termite secretions, the material having a hardness of not less than about Shore D70 for resistance to termite chewing, the strip having pores wherein each pore has a linear dimension in all directions less than the maximum linear dimension of the cross section of the head of the species of termite to be controlled, the strip having a second marginal edge portion opposite the first marginal edge portion; and

integrally securing the second marginal edge portion of the strip to the adjacent structure, to thereby provide integrity between the slab and the adjacent structure against passage of termites and thereby exclude entry of termites into the building structure.

22. The method of termite barrier installation between a concrete slab and an adjacent structure may also entail additional steps or further details as defined by dependent claims 42-50. In particular, my invention in certain embodiments entails:

- A. (As defined by dependent claim 42) A method of termite barrier installation wherein the strip is integrally secured to the slab by adhesive bonding.
- B. (As defined by dependent claim 43) A method of termite barrier installation wherein the bonding is achieved using a bonding material which is resistant to

termites.

- C. (As defined by dependent claim 44) A method of termite barrier installation wherein the strip is integrally secured to the slab by mechanical fixing.
- D. (As defined by dependent claim 45) A method of termite barrier installation wherein the strip is integrally secured to the adjacent structure by adhesive bonding.
- E. (As defined by dependent claim 46) A method of termite barrier installation wherein the bonding is achieved using a bonding material which is resistant to termites.
- F. (As defined by dependent claim 47) A method of termite barrier installation wherein the strip is integrally secured to the adjacent structure by mechanical fixing.
- G. (As defined by dependent claim 48) A method of termite barrier installation wherein the slab is cast in-situ and wherein the strip is integrally secured to the slab by embedding the first marginal edge portion into the slab during casting.
- H. (As defined by dependent claim 49) A method of termite barrier installation wherein the adjacent structure is cast in-situ and wherein the strip is integrally secured to the adjacent structure by embedding the second marginal edge portion into the adjacent structure during casting.
- I. (As defined by dependent claim 50) A method of termite barrier installation wherein the adjacent structure comprises a wall of brick construction and wherein the strip is integrally secured to the adjacent structure by embedding the second marginal edge portion in the wall between two layers of bricks.

23. The method of termite barrier installation of my invention also entails installation of a termite barrier flange between a concrete slab and a member projecting through the slab. In particular, my invention entails, as defined by new claim 51, the method of termite barrier installation for a building structure, comprising the steps of:
positioning a termite barrier flange around a member projecting through a slab of concrete
at or near ground level, the termite barrier flange comprising an inner peripheral

portion defining an opening for the member and an outer peripheral portion extending from the inner peripheral portion;
establishing a seal against the passage of termites between the inner peripheral portion and the member; and
integrally securing the outer peripheral portion to the slab, such that the termite barrier flange protects against the passage of termites between the slab and the member projecting therethrough.

24. The method of termite barrier installation between a concrete slab and a member projecting through the slab may also entail additional steps or further details as defined by dependent claims 52-54. In particular, my invention in certain embodiments entails:

- A. (As defined by dependent claim 52) A method of termite barrier installation wherein the termite barrier flange is formed of a mesh material resistant to breakdown in the environment of use and substantially resistant to termite secretions, the mesh material having a hardness of not less than about Shore D70 for resistance to termite chewing, the mesh material having pores wherein each pore has a linear dimension in all directions less than the maximum linear dimension of the cross section of the head of the species of termite to be controlled.
- B. (As defined by dependent claim 53) A method of termite barrier installation wherein the slab is cast in-situ and wherein the termite barrier flange is integrally secured to the slab by embedding the outer peripheral portion into the slab during casting.
- C. (As defined by dependent claim 54) A method of termite barrier installation wherein the seal is established by clamping the inner peripheral portion in pressure engagement with the member about a perimeter of the member.

25. The method of termite barrier installation of my invention also entails installation of a termite barrier strip on a foundation structure. In particular, my invention entails, as defined by new claim 55, the method of termite barrier installation for a building structure

comprising the step of:

during erection of the building structure on foundation structure, covering the foundation structure with a termite barrier flange, the termite barrier flange being formed of a material resistant to breakdown in the environment of use and substantially resistant to termite secretions, the material having a hardness of not less than about Shore D70 for resistance to termite chewing, the material having pores wherein each pore has a linear dimension in all directions less than the maximum linear dimension of the cross section of the head of the species of termite to be controlled, to thereby exclude entry of termites into the building structure through said portion of the slab.

26. My new counsel also informed me that the claims of my '017 patent do not expressly cover the "termite barrier flange" by itself without separately requiring a mesh sheet. As explained to me for the first time after issuance of the '017 patent by my counsel at Wray & Associates, the claims of the '017 patent do not expressly cover a termite barrier flange which is used with a different type of termite barrier. I had previously believed that the '017 patent did expressly cover such termite barrier flanges. In the circumstances, it appears that either I had failed to clearly convey to my previous counsel at the Watermark firm, and/or my previous counsel had not fully understood my instructions, that my patent should cover such termite barrier flanges.

27. As a result, I claimed less in the '017 patent than I had a right to claim. In particular, the original patent application and the issued '017 patent fails to state "termite barrier flange" claims.

28. In particular, my invention entails, as defined by new claim 56, a termite barrier flange for preventing passage of termites between a cast concrete slab and a member projecting through the slab, said termite barrier flange comprising a body having an inner peripheral portion defining an opening in which the member is received and an outer

peripheral portion adapted to be integrally secured to the slab.

29. The termite barrier flange of my invention may also entail additional structural details as defined by dependent claims 57-61. In particular, my invention in certain embodiments entails:

- A. (As defined by dependent claim 57) A termite barrier flange wherein the outer peripheral portion comprises perforations adapted to be embedded in the slab during pouring of the slab for integrally securing the outer peripheral portion to the slab.
- B. (As defined by dependent claim 58) A termite barrier flange wherein the inner peripheral portion comprises a cylindrical sleeve adapted to be clamped in pressure engagement with the member about a perimeter of the member.
- C. (As defined by dependent claim 59) A termite barrier flange further comprising a clamp for clamping the cylindrical sleeve in pressure engagement with the member.
- D. (As defined by dependent claim 60) A termite barrier flange wherein the outer peripheral portion extends radially outward from the inner peripheral portion.
- E. (As defined by dependent claim 61) A termite barrier flange wherein the body is formed from a material substantially resistant to termite secretions and having a hardness of not less than about Shore D70 for resistance to termite chewing, the material having pores wherein each pore has a linear dimension in all directions less than the maximum linear dimension of the cross section of a head of a species of termite to be controlled.

30. My new counsel also informed me that the claims of my '017 patent do not expressly include limitations to the termite barrier provided as a roll, to the termite barrier including a plurality of strips secured together in a side-by-side relationship, or to the termite barrier in combination with a building structure including the re-entrant fold. As explained to me for the first time after issuance of the '017 patent by my counsel at Wray & Associates, none of the claims of the

'017 patent have express limitations directed at these features of my invention. In the circumstances, it appears that either I had failed to clearly convey to my previous counsel at the Watermark firm, and/or my previous counsel had not fully understood my instructions, that my patent should include dependent claims with limitations directed at these features of my invention.

31. As a result, I did not define the invention in the '017 patent in such scope as I had a right to claim.

32. In particular, the original patent application and the issued '017 patent fails to state dependent claims drawn to:

- A. (as defined by new claim 21) A termite barrier as claimed in claim 1 wherein the mesh sheet is in the form of a roll, whereby a strip of the mesh sheet can be removed from the roll as required.
- B. (As defined by new claim 22) The termite barrier as claimed in claim 1 wherein the mesh sheet comprises a plurality of strips of mesh material, the strips of mesh material being positioned in side-by-side relationship with adjacent edges of the strips overlapping one another and being secured together.
- C. (As defined by new claim 23) The termite barrier as claimed in claim 22 wherein the adjacent edges of the strips are secured together in a multi-fold lap-type joint.
- D. (As defined by new claim 24) The combination as claimed in claim 14 wherein the strip of termite barrier material has between the respective longitudinal marginal edge portions thereof a re-entrant fold which extends longitudinally to provide flexibility and freedom for movement of the concrete slab relative to the adjacent structure without fracture of the strip of termite barrier material.

33. I believe that my claiming less than I had a right to claim in the '017 patent arose without any deceptive intent. This arose through: (1) error and misunderstanding by myself in that I failed to convey the true nature of my

invention to my former counsel at the Watermark firm, and failed to adequately cover my invention in the claims of the '017 patent; and/or (2) error and misunderstanding by my previous counsel at the Watermark firm in that my previous counsel did not fully understand the true nature of my invention and failed to adequately cover my invention in the claims of the '017 patent.

34. Thus, the '017 patent was allowed to issue with the claims being overly restrictive as pointed out above. Therefore, to correct the aforesaid errors, the original claims 1-20 of the '017 patent need to be supplemented by additional and new claims 21-61 in this reissue application to more completely and distinctly claim the invention.

DECLARATION

I declare that all statements made herein that are of my own knowledge are true and that all statements that are made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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T257.312-3

Inventor(s): Vasilios Toutountzis

Title: TERMITE CONTROL

In the patent application:

☒ identified above (and submitted to the Patent and Trademark Office herewith).

☐ filed on _____ as application Serial No. _____

I appoint the following attorneys and agents to prosecute the patent application identified above and to transact all business in the Patent and Trademark Office connected therewith, including full power of association, substitution and revocation:

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I ratify all prior actions taken by Kinney & Lange, P.A. or the attorneys and agents mentioned above in connection with the prosecution of the above-mentioned patent application.

I authorize Kinney & Lange, P.A. to mark the appropriate space above and to insert the filing date and Serial No. of the application, as appropriate.

I authorize the attorneys and agents named herein to accept and follow instructions from Wray & Associates as to any action to be taken in the Patent and Trademark Office regarding this application without direct communication between the attorneys and agents and the undersigned. In the event of a change in the persons from whom instructions may be taken, the attorneys and agents named herein will be so notified by the undersigned.

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